JUSTIFICATION OF PROGRAM AND PERFORMANCE

Activity: Park Management
Subactivity: Resource Stewardship

Program Components	2000 Estimate	Uncontr/ Related Changes	Program Changes (+/-)	2001 Budget Request	Change From 2000 (+/-)
A. Natural Resources Research Support	6,546	+21	+2,717	9,284	+2,738
B. Natural Resources Management	108,768	+1,826	+19,401	129,995	+21,227
C. Everglades Restoration and Research	8,708	+19	+500	9,227	+519
D. Cultural Resources Applied Research	16,989	+506	+1,000	18,495	+1,506
E. Cultural Resources Management	71,483	+1,229	+3,779	76,491	+5,008
F. Resources Protection	41,509	+661	+2,158	44,328	+2,819
Total Requirements $(000)	**254,003**	**+4,262**	**+29,555**	**287,820**	**+33,817**

AUTHORIZATION

16 U.S.C. 1	The National Park Service Organic Act
Public Law 105-391	The National Parks Omnibus Management Act of 1998
Public Law 105-203	The National Underground Railroad Network to Freedom Act of 1998

OVERVIEW

The mission of the National Park Service as defined by the 1916 National Park Service Organic Act is "...to conserve the scenery and the natural and historic objects and the wildlife therein and to provide for the enjoyment of the same in such manner and by such means as will leave them unimpaired for the enjoyment of future generations." As steward of the Nation's natural and cultural heritage, the Service is obligated to know what and where the resources are, their current condition, and how to maintain, restore, and protect them, where necessary. Armed with such knowledge, the NPS must take action to restore, preserve, and protect these precious, often irreplaceable resources. In order to carry out this stewardship responsibility, the Service has implemented a program that encompasses a broad range of research, operational, and educational activities conducted to inventory, evaluate, document, preserve, protect, monitor, maintain, and interpret the resources at 379 parks so as to perpetuate their existence, and to allow for their continued appreciation, understanding and enjoyment.

The **Resource Stewardship** subactivity consists of four major program components: a natural resources stewardship component (which includes natural resources research support and natural resources management) for the preservation and protection of the natural resources of the National Park System, including natural scenery, wildlife, vegetation, air, water, geologic resources and ecosystems of the National Park System; an Everglades research and restoration component for activities related to the recovery and restoration of the Everglades watershed; a cultural resources stewardship component (which includes cultural resources applied research and cultural resources management) for the preservation and protection of the National Park System's cultural resources, including prehistoric and historic archeological sites and structures, ethnographic resources, cultural landscapes, and museum collections; and, a resources protection component that monitors resources to prevent intended or unintended damage to the resources.

Park Management/Resource Stewardship

APPLICABLE NATIONAL PARK SERVICE MISSION GOALS

Ia Natural and cultural resources and associated values are protected, restored and maintained in good condition and managed within their broader ecosystem and cultural context.

Ib The National Park Service contributes to knowledge about natural and cultural resources and associated values; management decisions about resources and visitors are based on adequate scholarly and scientific information.

IIa Visitors safely enjoy and are satisfied with the availability, accessibility, diversity, and quality of park facilities, services, and appropriate recreational opportunities.

IIb Park visitors and the general public understand and appreciate the preservation of parks and their resources for this and future generations.

IIIa Natural and cultural resources are conserved through formal partnership programs.

IIIb Through partnerships with State and local agencies and nonprofit organizations, a nationwide system of parks, open space, rivers, and trails provides educational, recreational, and conservation benefits for the American people.

IIIc Assisted through Federal funds and programs, the protection of recreational opportunities is achieved through formal mechanisms to ensure continued access for public recreation use.

IVa The National Park Service uses current management practices, systems, and technologies to accomplish its mission.

A. Natural Resources Research Support
FY 2000 Estimated Program and Anticipated Accomplishments

Enacted: $6,546,000

The Natural Resources Research Support program addresses specific questions with immediate applications for natural resource management within the National Park System, as well as longer-term research to enhance overall understanding of specific park resources and the ecosystems upon which these resources are dependent. It also includes evaluation of research needs and coordination with the Biological Resources Division of the U.S. Geological Survey (USGS) and others to obtain research needed by the National Park Service. The conduct and acquisition of current research under this activity in FY 2000 is primarily related to physical science investigations.

Typically, parks do not have specific funds allocated for research, but may fund individual projects in any given year. Research needs, objectives, and priorities are included in the Resource Management Plans developed for each park.

A major focus of the Servicewide natural resources research support program in FY 2000 relates to air quality research. Its primary emphasis is on visibility, a discipline not covered by the USGS/Biological Resources Division or sufficiently by other Federal agencies. This research responds to statutory mandates to protect important scenic resources and other air quality related values in parks from being impaired by air pollution, and assists in meeting NPS responsibilities under the Clean Air Act. A significant portion of this research effort is the acquisition of long-term monitoring data on visibility conditions in national parks -- especially Class I parks -- and on the composition of particles in the air that cause visibility impairment. Combined with research on the transport and transformation of air pollutants, these data help identify the regions and sources of the pollutants that cause visibility impairment in parks. The $2.5 million in funding provided in FY 2000 for this activity is continuing NPS research on the effects of particulate matter on visibility in national parks. The NPS will also maintain a 46-station network of fine particle samplers in partnership with the Environmental Protection Agency (EPA), an 18-station network of optical monitors, and a 14-station network of ultraviolet-B monitors also in partnership with EPA. The NPS will also coordinate EPA-funded air quality related ecological effects research and monitoring at selected parks, as well as the expansion of the Environmental Protection Agency's nationwide fine particle

sampling network into various NPS Class I areas. This information is critical in assessing NPS progress towards achieving its long-term GPRA performance goal Ia3: Air Quality, that addresses air quality throughout the National Park System. Visibility in parks is one of three key performance indicators the NPS uses to assess progress towards this goal.

Program	Resources Monitored	Parks in 1999
EPA-funded, joint Air Quality Program; EPA Park Research and Intensive Monitoring of Ecosystems Network (PRIMENet)	Ultraviolet-B Radiation	14 parks
Air Quality Program, as part of the multi-agency Interagency Monitoring of Protected Visual Environments (IMPROVE) Program	Particulate matter (PM10 and PM2.5)	46 parks, 43 as part of IMPROVE Program

In addition to the above, projects funded in FY 2000 include: (1) continued research and development of reliable methods for measuring fine particle absorption, a key component to visibility impairment in many parks, (2) completion of the Big Bend Regional Aerosol and Visibility Observational (BRAVO) Study that focuses on apportioning visibility impairment at Big Bend National Park to United States and Mexican sources of air pollution, (3) continuation of research efforts to apportion and differentiate the contribution of emissions from wildland fires (from those of industrial sources) to fine particle and visibility impacts in NPS Class I areas, and (4) participation with the Environmental Protection Agency in the PRIMENet, a research program focusing on establishing a rural, nationwide network of ultraviolet-B radiation monitors and investigating the ecological effects of various airborne environmental stressors at fourteen NPS units. In FY 2000, the NPS will continue most of its FY 1999 activities and will initiate new visibility research in appropriate areas to continue meeting NPS responsibilities under the Clean Air Act.

FY 2001 BUDGET REQUEST

	2001 Budget Request	Program Changes (+/-)
▪ Natural Resources Research Support $(000)	9,284	+2,717

The FY 2001 request for Natural Resources Research Support is $9.284 million, which represents an increase of $2.738 million over the FY 2000 enacted level. The FY 2001 proposed programmatic increase of $2.717 million to Natural Resources Research Support activities includes:

	$(000)
▪ Park Base Operations Increase	117
▪ Alaska Natural Resource Projects	100
▪ Cooperative Ecosystem Studies Units	1,600
▪ Establish Learning Centers	900
Total	2,717

Justifications for these increases are included at the end of this subactivity's presentation.

B. Natural Resources Management
FY 2000 Estimated Program and Anticipated Accomplishments

Enacted: $108,768,000

Natural resource management within the National Park System is conducted largely at the park level, including planning for resource preservation programs and projects. This resource management is effectively park-based with the primary responsibility for natural resource preservation activities vested with the parks themselves. Servicewide subject-matter specialists, and linkages to additional technical and scientific support through other agencies and universities, provide parks with technical assistance and scientific support for decision-making and problem resolution. Some functions, particularly physical science technical assistance to parks related to air, water and geologic resources, are carried out by centralized staffs with special expertise in performing multi-park activities involving specialized, cost-effective approaches (e.g., resource monitoring networks). Natural resource funding received by the NPS is allotted primarily to provide salary and support costs for personnel based in parks where only limited or non-recurring funds may be available to fund needed programs and projects.

The only reliable and dedicated major source of funds for park natural resource management projects is the Natural Resource Preservation Program (NRPP). This Servicewide program provides funding for park natural resource management related projects that are beyond the funding capabilities of the parks themselves and has come to be relied on by parks to fund the highest priority individual projects. The Natural Resource Preservation Program is used not only to provide a source of funding for large natural resource management projects (costing more than $40,000) but a portion is used to fund projects in smaller parks. In FY 1999, documented, non-recurring park natural resource project needs totaled more than $534 million, with large projects making up 55 percent of the total number of projects but 93 percent of the large project funding need. Approximately fifteen new projects were initiated in FY 1999 using NRPP funds. These funds support diverse natural resource projects designed to preserve geologic, wildlife, fisheries, vegetation, environmental conditions (e.g., audible sound conditions), and other natural features in parks.

In FY 2000, the NPS is implementing the first component of a comprehensive expansion to the Natural Resource Preservation Program as part of the Natural Resource Challenge. The NPS has committed a substantial portion of the program increase of $2.875 million to large-scale restoration projects in parks. The FY 2000 program will increase the number of projects initiated annually in parks and target funding in two special emphasis areas: the restoration of natural resources damaged due to human disturbance; and the restoration of threatened and endangered species. Park projects include multi-year stream and watershed restoration projects in Buffalo National River and Denali National Park and Preserve; creek restoration at Golden Gate National Recreation Area; backfilling of abandoned oil and gas exploration canals to restore marshes at Jean Lafitte National Historical Park and Preserve; and, wetlands surface hydrology restoration at Big Cypress National Preserve. Park projects funded in FY 2000 through the Natural Resource Preservation Program support the achievement of several of the Service's long-term goals including Ia1: Disturbed Lands/Exotic Species; Ia2: Threatened and Endangered Species; and, Ia4: Water Quality.

Natural Resource Planning

Resource Management Plans (RMP) define the park's natural and cultural resource management programs and serves as a blueprint for the comprehensive management of resources necessary to meet the Park Service's statutory obligations under the 1916 Organic Act. Resource management plans are intended to tier the desired future conditions for park resources and visitor experiences identified in park general management plans into specific resource management program direction and provide guidance to park strategic plans. Servicewide in FY 1999, park resource management plans identified at least 19,000 natural resource management program and project

needs with 267 parks reporting. The RMPs for the remaining parks are in need of updating or are being developed. In FY 2000, the NPS is initiating steps to enhance how resource management plan needs are reported within the bureau and how program needs are integrated into long-term strategic planning.

Natural Resources Inventory and Monitoring Activities

Park managers require scientifically sound, comprehensive information on the natural resources occurring within parks and the processes necessary to maintain them in order to meet the bureau's statutory obligations. The NPS administers a Servicewide Inventory and Monitoring (I&M) Program and also has inventory and monitoring components as part of other programs such as the air quality and water resources programs. The Servicewide inventory and monitoring program funds a systematic effort to meet specific natural resource inventory needs at approximately 256 parks. Inventory information is an essential component to understanding species diversity, abundance, and distribution. This activity supports the achievement of the Service's long-term goal Ib1: Natural Resource Inventories.

To address a general lack of scientific information and monitoring expertise, the Service utilizes inventory and monitoring funding to acquire eleven basic data sets for each of the 256 parks. The inventories include: an automated, historical database (bibliography); surveys/lists of vascular plants, vertebrates, threatened and endangered species, and other species of special concern for a particular park; cartographic, geologic, and soils maps; water resource inventories; air quality information, including air quality related values; and basic precipitation and meteorological data. A twelfth data set, vegetation maps, is being completed by the USGS/Biological Resource Division using funding the NPS transferred to that agency in 1994. Collectively, these data sets represent the minimum scientific information needed to manage park natural resources and effectively address the bureau's statutory responsibilities.

In addition to conducting resource inventories, the Service's inventory and monitoring efforts involve the acquisition of accurate information about the current condition of park natural resources, monitoring resource conditions over time, and developing standards to evaluate these changes and assessing the effectiveness of NPS management actions to preserve park natural resources. To date, the NPS has initiated seven long-term ecological monitoring programs involving fourteen parks to develop and test cost-effective methods for monitoring park ecosystem status and trends over time. These long-term monitoring programs are used to formulate management strategies to detect and cope with threats to park natural resources. The USGS/Biological Resources Division funds and oversees initial design of the prototype monitoring programs, which the NPS funds and operates once designed. Lessons and expertise gained through these prototypes provide approaches that are frequently transferable to other parks.

Monitoring endangered butterfly habitat at Indiana Dunes National Lakeshore

The Servicewide I&M program is accelerating efforts to complete inventories for base cartography data, soils mapping, geologic resources, and water quality in 140 additional parks during FY 2000 as well as working to compile and verify existing species information for parks already possessing similar inventories. In FY 2000, the NPS will also initiate field-level inventories for vascular plants and vertebrate species of special concern to park managers (e.g. distribution of critical habitat for the endangered piping plover at Cape Cod National Seashore) in 32 park networks involving more than 250 parks Servicewide. In FY 2000, the NPS will, in addition, provide full operational support to the four prototype long-term ecological monitoring programs undergoing research and development and will continue with efforts to assess current monitoring activities by parks with needs not met by current monitoring activities. A description of the twelve data sets follows as well as a table summarizing the progress to date on the inventory and monitoring program.

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Bibliographies. Critical to informed natural resource management decisions is access to historical scientific and pertinent anecdotal information by decision-makers. In many cases, a substantial amount of relevant, historical information about park resources, which could be used to guide park managers, already exists but is poorly documented and widely dispersed limiting its availability to the NPS. In FY 2000, this inventory activity will improve this condition by cataloguing park information holdings (publications, reports, maps, etc.) contained in a wide range of repositories within parks and other locations, and incorporate the information into a comprehensive, centralized database which can be readily accessed by NPS managers.

Base Cartography Data. By far, the most efficient and cost-effective way for park managers to utilize complex natural resource information is through spatial display and analysis. For example, by incorporating relatively basic information about vegetation communities and topography into a spatial analysis, managers can locate potential habitats for endangered plant species or predict conditions likely to influence a wildland fire. Consequently, all parks urgently need the assembly of basic spatial information access and support from geographic information systems (GIS) to support decision-making and resource protection activities. To help accomplish that goal, this inventory effort will continue to obtain four basic cartographic products needed to construct and update park geographic information system capabilities through a 50:50 cost-share arrangement with the U.S. Geological Survey.

Vegetation and Landcover Maps. Vegetation information is arguably the most critical piece of information needed for park resource management and protection. Vegetation assemblages integrate diverse information on air quality, soils, topography, hydrology, meteorological conditions, and animal interactions that provide park managers with a key measure on the status of the natural systems they are managing. Spatial vegetation data for parks in Alaska continues to be developed to assist NPS managers in monitoring, detecting, and quantifying changes in park plant species distribution and condition, and to aid in determining if such changes are natural or man-caused. The USGS/Biological Resources Division is also collecting similar data. Vegetation maps are vital for (1) the management and protection of wildlife habitat (e.g., forest age structure and minimum habitat area dependence of certain neotropical migratory songbirds), (2) modeling vegetation flammability and fuel loading implications for fire management, (3) analyses for site development suitability, and (4) evaluation of resources at risk. In FY 1999, ten percent of the parks had a comprehensive vegetation inventory and corresponding spatial information. Accordingly, in FY 2000 this component of the natural resource program will continue to map vegetation in parks using a common classification scheme and consistent scale to facilitate, not only park-specific management, but multi-park and regional comparisons and assessments as well. Aerial photography is being used as the basis for this mapping in parks outside of Alaska. In Alaskan parks, vegetation and associated landcover features are being mapped from satellite imagery because of their large size.

Species Lists. Park management must be based on a thorough understanding of the species occurring within each park in order to meet the bureau's statutory responsibilities. In FY 2000, ongoing vertebrate wildlife and vascular plant species lists developed through previous surveys and park inventory and monitoring projects are providing crucial information concerning both native species and nonnative species. While native species information, when coupled with habitat information within parks, supports NPS efforts to protect and aid in the recovery of threatened and endangered species, information on invasive nonnative species substantially assists the bureau in addressing this major and very widespread threat to the preservation and restoration of natural habitats in the parks. Information on the species found within parks has particular value in the quality of visitor experiences (e.g., opportunities to personally observe or to learn about park wildlife through NPS resource education programs and media). Park visitors are often extremely interested in knowing what species are found in the park and likely to be observed at different times of the year thereby making this information essential for park resource interpretation programs, displays, and information packages. Vegetation information is vital for effective planning of new field investigations and research in the parks. Similar to the bibliography projects described above, this aspect of the inventory and monitoring program consolidates
all existing species lists, wildlife observation cards and similar information available in the park, as well as species information from other Federal and/or State resource management agencies, and The Nature Conservancy into comprehensive park species databases which are readily accessible to park managers.

Park Management/Resource Stewardship

Northern Elephant Seals at Point Reyes National Seashore

Biological Inventories. While most parks have at least some information about the species of vertebrate wildlife and vascular plants found within their boundaries, the information is often limited and of uncertain quality. A survey of 252 natural resource parks published in 1993 revealed that more than 80 percent of those parks lacked reliable information about which species were present, their geographic and ecological distribution, and relative abundance in the park. This component of the inventory and monitoring program provides for new field inventories with the goal of documenting the occurrence and relative abundance of at least 90 percent of the vertebrate wildlife and vascular plants found in parks, giving special attention to species occurring on Federal and/or State threatened and endangered listings. These inventories also provide park managers with baseline information needed to monitor these resources in the future to detect change. Most of the $7.3 million increase received in FY 2000 is being used to greatly accelerate biological information, including amphibian inventories.

Water Quality. Perhaps few resources in parks are more impacted or influenced by activities outside park boundaries than water resources. Park managers urgently need information about the current status of water quality in the parks as well as "benchmarks" against which they can compare future information. In that context, the primary goal of this inventory activity is to provide descriptive water quality information in a format useful to park managers. For each park, a Baseline Water Quality Data Inventory and Analysis Report is being prepared which provides a wide variety of water quality status and trend information. Additional water quality inventories are also being conducted where park coverage is incomplete and gaps need to be filled. In addition to benefiting parks, the information is used to support activities under the Clean Water Act and other national programs.

Soils Maps. Detailed information about the physical and chemical properties of soils found in parks is essential for park natural and cultural resource management and protection. Soil surveys provide basic information needed to manage soil sustainability and to protect water quality, wetlands, vegetation communities, and wildlife habitats. Soil surveys also provide managers with the ability to predict the behavior of a soil under alternative uses, its potential erosion hazard, its potential for ground water contamination, its suitability for control of exotic plant species and establishment of native communities, and its potential for preservation of cultural sites and landscapes. The NPS works cooperatively with the U.S. Department of Agriculture's Natural Resources Conservation Service to provide park managers with basic information about soils throughout the parks as well as more detailed information for potentially high-use or developed areas in the park (e.g. visitor centers, campgrounds, access roads, etc.).

Geology Maps. Like soil maps, geologic maps form a second fundamental piece of information park mangers need to make effective decisions based, not only on what conditions currently exist in the park, but also what may occur if a given management action or construction project is undertaken. Geologic maps are critical for documenting the nature and location of unique geologic features described in park enabling legislation, including ground water supplies, paleontological resources, caves and other karst resources, and abandoned mine lands requiring restoration. These maps also serve as predictive tools in locating populations of plant and wildlife species dependent on unique chemical environments. Furthermore, the predictive capabilities of geologic maps can help park managers better protect visitor safety by identifying the location of potential geologic hazards. To meet these needs, this inventory activity is being conducted in a manner similar to that described for water quality above. Each park is being provided with a report containing a detailed listing and evaluation of geologic information currently available for the park plus a copy of any existing geologic maps in digital format. New mapping projects are undertaken if needed to address specific park issues.

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Water Resource Location. This component of the inventory program will focus on locating and classifying important water bodies in parks. The protection of park waters, watersheds, and aquatic life is fundamental to the Service's ability to meet its statutory responsibility to preserve park resources, and to ensure the quality of the visitor experience. Information to be collected will include the location, size, and flow of streams, lakes, and springs. Among other applications, information of this nature is needed to determine watershed boundaries and how land management practices within that watershed might eventually impact park resources. Because of this, several park monitoring programs are based upon a watershed strategy. Some components of this inventory are currently being acquired through the hydrography component of the base cartographic inventory.

Air Quality Data. The Clean Air Act amendments require that Federal land managers identify air quality related values (AQRVs) for public lands that may be subjected to emissions from new point sources of air pollution. These AQRVs usually include sensitive plant and animal species, sensitive lakes and soils, and levels of visibility. This list is needed by States and air quality permit applicants who are required to demonstrate that their additional emissions will not have an "adverse effect" on air quality related values in Class I areas. The NPS has 48 Class 1 areas that require this level of protection while all other NPS units are considered to be Class II areas. During FY 2000, the NPS is initiating development of air quality related values lists for numerous parks. The lists will include: (1) species of flora and fauna potentially sensitive to air pollution and acid deposition (including invertebrate species), (2) sensitive ecosystems and ecosystem processes (e.g. watersheds), (3) sensitive soils and surface waters, and (4) scenic vistas.

Air Quality Stations. A large number of parks do not currently have permanent air quality monitoring stations located within their boundaries. Therefore, these parks have to rely upon obtaining air quality information from stations located adjacent to but outside of the park's boundaries. This inventory activity will identify available sources of air quality information closest to the park boundary and evaluate its usefulness for park management and resource protection. The inventory will also focus on providing information on location of sources and changes in air pollutants that parks should be concerned about. This inventory activity will be conducted simultaneously with air quality inventories described above.

Meteorological Data. The meteorological information to be compiled for parks will include basic data on annual precipitation, relative humidity, prevailing wind speed and direction, and temperature variability. This basic information is needed for a wide variety of applications in park management and resource protection. For example, several of the parameters are needed to predict fire behavior patterns and therefore improve the park's ability to plan and safely manage both hazard reduction and resource objective prescribed burns, and wildfires. This information is also essential for park managers to assess cyclical and other episodic forest insect and disease conditions commonly influenced by meteorological conditions. The data are also used in numerous vegetation monitoring studies and essential in gaining a better understanding of the current and potential distribution of native, threatened and endangered, and exotic plant species in the park.

Performance Goals

Long-term Goal Ib1	By September 30, 2005 acquire or develop 2,083 (87%) of the 2,527 outstanding data sets identified in 1997 of basic natural resource inventories for all parks.
Annual Goal Ib1	By September 30, 2001, acquire or develop 30% of the 2,527 outstanding data sets identified of basic natural resource inventories for all parks.

Park Management/Resource Stewardship

Natural Resources Inventory Data Sets	Funded/Completed As of FY 2000	Number of Applicable Parks
Automated Bibliographies	256	256
Base Cartographic Data	213	256
Vegetation (Non Alaska)		
Photos	30	240
Maps	20	240
Alaska Landcover Mapping	3	16
Species Lists	175	256
Biological Inventories	0	256
Water Quality		
Databases Summarized	256	256
Field Surveys (Gaps)	50	256
Soils		
Digital Maps	30	256
Geology		
Baseline Assessments	0	256
Digital Maps	0	256

NPS Servicewide programs also assist parks in obtaining specialized water quality inventories and monitoring, water resources data management, and data analyses including geographic information system applications. The Park Service has implemented a partnership with the U.S. Geological Survey/National Water Quality Assessment (NAWQA) Program to include parks in the USGS study basins, and to jointly fund water quality monitoring by the U.S. Geological Survey in parks outside the NAWQA study basins. Over 200 parks lie within the existing or proposed study units, but monitoring in additional parks is unfunded.

A significant portion of the Service's FY 2000 air resource activity is dedicated to monitoring air pollution in parks. This monitoring includes the measurement of ozone, other gaseous pollutants, meteorological conditions, and acidic deposition (acid rain) levels to supplement the visibility and fine particulate information being developed as part of the NPS applied research into air quality. Ongoing air quality monitoring is important to the preservation of air resources in parks and is necessary to: (1) accurately assess conditions in the parks, (2) detect any of several gaseous pollutants which have been shown to be particularly injurious to park vegetation, (3) measure ozone levels in parks (e.g., Great Smoky Mountains National Park and Sequoia National Park) where concentrations exceed threshold levels and national ambient air quality standards, and (4) collect data on wet and dry atmospheric deposition of sulfer and nitrogen compounds on park ecosystems with significant adverse effects on lakes, streams, and soils. Historically, neither the Environmental Protection Agency nor the various States have monitored air pollution levels in rural areas, particularly in national parks. In FY 2000, the NPS is continuing to collect systematic data on sulfur dioxide, ozone, and meteorological parameters at 30 stations in 25 parks; wet deposition (acid precipitation) as part of the National Atmospheric Deposition Program/National Trends Network in 23 parks; and visibility (atmospheric extinction or scattering) in 18 parks. Air quality information developed

through the NPS and partnership research activities will also provide monitoring information on ultraviolet-B radiation in 14 parks and particulate matter in 46 parks. The NPS extensively leverages the funding it commits to air resource monitoring through formal partnerships with Federal (primarily EPA), State and local agencies. Air resource preservation activities support the achievement of the Service's long-term goals Ia3: Air Quality and Ia4: Water Quality.

Servicewide natural resource program monitoring activities are summarized in the following table:

Servicewide Monitoring Activities	Resources Monitored	Number of Parks in 1999
Air Resources	Sulfur dioxide, ozone, and meteorological parameters	30 stations in 25 parks
Air Resources	Wet deposition (acid rain) as part of the National Atmospheric Deposition Program National Trends Network	23 parks
Air Resources	Visibility (atmospheric extinction or scattering)	18 parks
Water Resources through USGS National Water Quality Assessment	NAWQA parameters	14 parks in study basins
Inventory and Monitoring	Park natural resource and ecosystem conditions through development and testing of prototypes	Operational: Channel Islands National Park Great Smoky Mtns National Park Shenandoah National Park In design (BRD-funded): Denali National Park Great Plains cluster (6 parks) Virgin Islands cluster (3 units) Cape Cod National Seashore

Much of the data being developed through both inventory and monitoring efforts are digital, geographically referenced data that can be utilized in geographic information system applications and allow comparisons and analysis of several data sets together. There are currently over 100 parks with operational systems and about 250 sites operate desktop geographic information systems as decision-support tools on an as-needed or part-time basis. Staffing of park-based programs is funded at the park level and supports a wide variety of resource management and other applications. In addition, regionally distributed GIS technical support services and geographic information system funding is provided to acquire spatial data to assist parks with GIS-supported analyses, especially parks with limited capability.

Natural Resource Preservation Activities

NPS programs in FY 2000 focus on responding to a number of complex issues including: protecting parks as increasingly crowded remnants of primitive America in a fragmented landscape, threats by invasive exotic species, pollution, and incompatible uses of resources in and around parks. The NPS is actively managing National Park System natural resources to meet its statutory responsibility to preserve these resources unimpaired. While most natural resource preservation activities are funded and undertaken at the park level, technical assistance supporting science-based decision-making is provided to parks through Servicewide programs for these and most natural resource mitigation and restoration efforts. National Park Service management of park natural resources is integral to both the protection and perpetuation of these resources and the conditions comprising the experiences and opportunities available to the American public. As visitors seek to enjoy and appreciate park natural resources, the

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NPS is actively engaged in protecting these resources from inappropriate use, or use levels that exceed the capacity of affected resources to recover. Simultaneously, the NPS is engaged in managing non-visitor uses of natural resources (e.g., mining and grazing) located and legally permitted within parks. Natural resource programs and projects are routinely developed and implemented at the park-level, and frequently supported by Servicewide technical assistance specialists. Park programs and projects are identified in park resource management plans and linked to park strategic plans.

Disturbances directly affecting park natural resources can result in severe and persistent changes to habitat conditions and ecosystem functions that disrupt natural processes, and otherwise destroy natural systems. Park units contain many examples of areas disturbed by past human activity and adverse effects to park resources that require restoration. These activities and associated impacts include: abandoned roads; backcountry campsites and other discrete areas impacted by visitor and other uses; habitats such as prairies and wetlands altered by changes in water flow; areas invaded by exotic plant species; disruption of natural fire regimes with losses of fire-dependent vegetation and wildlife habitat; and populations of threatened and endangered and other plants and animals that have been extirpated from an area. More than 315,000 acres of NPS managed lands exist in damaged condition that results in lost plant and wildlife habitat, accelerated erosion, sedimentation, poor water quality, diminished water quantity, and visual scars. Parks must determine appropriate levels and types of visitor use and permitted activities such as fishing, river use, backcountry use, and hunting. Parks must evaluate, plan, and design the appropriate type and level of activities that can be carried out without impairing resources. This often results in the development of a management or operations plan that utilizes an environmental assessment to evaluate alternatives and needed mitigation. The plans are based on data developed through research and monitoring projects.

Performance Goals

Long-term Goal Ia1	By September 30, 2005, 10.1% of targeted parklands, disturbed by development or agriculture as of 1999 (22,500 of 222,300 acres), are restored; and Ia1B -- exotic vegetation on 6.3% of targeted acres of parkland (167,500 of 2,656,700 acres) is contained.
Annual Goal Ia1	By September 30, 2001, 2% of targeted parklands, disturbed by development or agriculture, as of 1999, are restored; and exotic vegetation on 1.3% of targeted acres of parkland is contained.
Long-term Goal Ia2	By September 30, 2005, 19% of the 1999 identified park populations (84 of 442) of federally listed threatened and endangered species with critical habitat on park lands or requiring NPS recovery actions have an improved status; and Ia2B -- an additional 18.1% (80 of 442) have stable populations.
Annual Goal Ia2	By September 30, 2001, 14% of the 1999 identified park populations of federally listed threatened and endangered species with critical habitat on park lands, or requiring NPS recovery actions have an improved status; and an additional 18.1% have stable populations.
Long-term Goal Ia4	By September 30, 2005, 85% of parks have unimpaired water quality.
Annual Goal Ia4	By September 30, 2001, 65% of parks have unimpaired water quality.

Air resource management in the National Park System is designed to assist parks in, (1) assessing the condition of air quality and AQRVs in parks and identifying any existing impacts and their causes, (2) identifying sensitive air quality related values in parks and determining the sensitivity thresholds for these values, (3) preventing or mitigating potential resource damage from new sources of air pollution locating near parks through review and comment on Prevention of Significant Deterioration permit applications, and (4) developing resource education materials for use in parks to inform park visitors and the public.

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Information and results obtained from air quality research and other NPS air quality monitoring programs advance the state of science of air pollution -- and the effects on natural ecosystems and visibility -- and are used to influence decisions by States, other Federal agencies, and foreign governments to protect resources from the adverse effects of air pollution. Data are also used to inform and educate regulatory agencies, park visitors, and the public on trends in visibility in national parks; and, to assist States and regional organizations in formulating appropriate strategies to improve visibility in national parks. Pursuant to the Environmental Protection Agency's fine particulate matter standard (PM2.5) and regional haze regulations, States and Federal agencies rely heavily on NPS monitoring data and research findings in developing and implementing their State Air Quality Implementation Plans. The National Park Service will continue active participation in the Southern Appalachian Mountains Initiative, the Western Regional Air Partnership, and other similar regional initiatives by providing critical visibility and ecological effects monitoring and research information to develop and implement regional solutions to difficult air pollution issues facing Shenandoah, Great Smoky Mountains, Grand Canyon and other national parks.

A significant external threat to park natural resources is the construction of new major sources of air pollution, particularly to those parks designated as "Class I" areas under the Clean Air Act. In FY 2000, the NPS is continuing reviews of permit applications for new sources and assisting States in the permitting process to reduce the levels of air pollution from these sources and mitigate potential adverse effects on park resources.

Performance Goals

Long-term Goal Ia3	By September 30, 2005, air quality in 80% of reporting park areas has remained stable or improved.
Annual Goal Ia3	By September 30, 2001, air quality in 60% of reporting park areas has remained stable.

Air Quality in the 48 Class 1 Area Parks **(Percent Remaining Stable or Improving from 1997 Baseline)**	**FY 1999 Actual**	**FY 2000 Estimate**	**FY 2001 Estimate**
Improvement in visibility.	63%	55%	60%

In FY 2000, the NPS will begin a comprehensive expanded Servicewide program for the preservation of native species and the management of exotic species in parks. This park-focused biological resource management program provides specialized, scientifically-based support to parks in protecting and perpetuating native plant and animal species, including endangered species, to meet the Service's statutory resource protection responsibilities. This program will assist parks in addressing technically complex native species management needs requiring the application of scientific knowledge and often involving legal or policy related issues, especially to parks lacking the expertise necessary to address natural resource issues. Assistance provided to parks in FY 2000 includes assessing the consequences of wildlife disease outbreaks, designing mitigation measures to aid in the recovery of threatened and endangered species or other ecosystem functions, preparing guidance for the safe and humane capture and chemical immobilization of problem wildlife, and evaluating the potential use of biological control agents to control invasive exotic plant species.

Parks are occupying an increasingly important role in the protection and restoration of habitat essential for the recovery of threatened and endangered species. More than 160 parks currently provide important habitat for at least 168 species listed under the Endangered Species Act. These species include 86 plants, 29 birds, 20 mammals, 14 fish, ten (10) reptiles, eight (8) invertebrates, and one (1) amphibian. Recovery plans prepared by the U.S. Fish and Wildlife Service and the National Marine Fisheries Service have assigned 2,039 recovery tasks affecting parks. These conservation activities involve a range of tasks including the removal of exotic fish species and reintroduction of Greenback cutthroat trout into streams within the trout's historic range in Rocky Mountain

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National Park; removal of competing exotic plants and habitat protection for the Presidio manzanita at Golden Gate National Recreation Area; reintroduction of the gray wolf into Yellowstone National Park; control of exotic plant and animal species threatening to extirpate endangered native species in Hawaii Volcanoes and Haleakala National Parks; and incorporating public education in law enforcement patrols that is aimed at eliminating the poaching of endangered species. In FY 2000, the NPS is expanding its capability to provide scientifically-based support to parks in the design and implementation of recovery actions. Endangered species conservation and recovery activities on park lands support the achievement of the Service's long-term goal Ia2: Threatened and Endangered Species.

Performance Goals

Long-term Goal Ia2	By September 30, 2005, 19% (84 of 442) of the 1999 identified park populations of federally listed threatened and endangered species with critical habitat on park lands or requiring NPS recovery actions have an improved status; and Ia2B -- an additional 18.1% have stable populations.
Annual Goal Ia2	By September 30, 2001, 14% of the 1999 identified park populations of federally listed threatened and endangered species with critical habitat on park lands, or requiring NPS recovery actions have an improved status; and an additional 18.1% have stable populations.

Beginning in FY 2000, in conjunction with its native and endangered species programs, the NPS is initiating an expanded program to contain and reduce exotic (nonnative) species infestations, particularly those involving species capable of readily invading new environments or displacing native species in parks. Management of exotic species which are adversely impacting natural ecological processes and native species in parks is integral to the Service's ability to meet its statutory responsibility to preserve park resources. Exotic species in at least 194 parks, especially invasive exotic species, are a serious problem and adversely effect other species that are native to the parks, including endangered species.

Leafy Spurge Dominated Grassland at Theodore Roosevelt National Park

In FY 2000, the NPS is using specialized teams to implement high priority exotic species management efforts in a number of parks. Based on a previous pilot project at Lake Mead National Recreation Area, these park-based teams will work with multiple parks to identify, develop, conduct and evaluate exotic species removal projects and undertake appropriate native species restoration efforts. The NPS estimates that these teams will increase the acreage of exotic species being actively controlled by 10,000 acres and also improve the status of several threatened or endangered species populations occurring in parks where listing resulted, at least in part, from competition or displacement by exotic species. The NPS is using various approaches including integrated pest management, supported by current scientific information, to control exotic species populations in parks and to protect sensitive resources from destruction by exotic species. In seeking to manage many exotic species, control technologies are not available, or their rate of spread over park lands exceeds the Service's current management capabilities. Exotic species management activities on park lands support the achievement of the Service's long-term goal Ia1: Disturbed Lands/Exotic Species.

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Performance Goals

Long-term Goal Ia1	By September 30, 2005, 10.1% of targeted parklands, disturbed by development or agriculture as of 1999 (22,500 of 222,300 acres), are restored; and Ia1B -- exotic vegetation on 6.3% of targeted acres of parkland (167,500 of 2,656,700 acres) is contained.
Annual Goal Ia1	By September 30, 2001, 2% of targeted parklands, disturbed by development or agriculture, as of 1999, are restored; and exotic vegetation on 1.3% of targeted acres of parkland is contained.

The following table presents cumulative NPS acreage for disturbed land restoration projects initiated or planned in parks.

Disturbed Lands/Exotic Species Performance Information	FY 1999 Actual	FY 2000 Estimate	FY 2001 Estimate
Acres of lands restored that were impacted by former uses	18,400	25,000	31,600
Acres of invasive plant and animal species contained	120,000	148,800	34,500

In FY 2000, the NPS is expanding Servicewide management of geologic resources by concentrating on programs, that provide specialized, scientifically-based support to parks. The Service is assisting numerous parks in FY 2000 with technical needs concerning cave and karst systems, coastal processes, paleontological resources, geologic hazards, and reclamation geology (e.g., erosion control, fluvial geomorphology, slope stability, soils), and providing pertinent scientific information in the development and implementation of management actions involving geologic resources. This technical assistance provides the specialized expertise necessary to restore park lands adversely effected by human disturbance (e.g., roads and trails, dams, jetties, and mineral development) which may have far-reaching adverse effects on both geologic and biologic components of park ecosystems.

In addition, the NPS is continuing to protect park natural resources from the impacts of mineral development to meet its statutory responsibility to preserve park resources, regardless of whether the activity ceased prior to park establishment, terminated since that time, or either continues or is being initiated pursuant to specific legislative authorization. Formal plans incorporating appropriate resource protection and mitigation measures are required for private mineral development now occurring in about 25 parks. Abandoned mining, and oil and gas exploration and production sites represent a substantial portion of the disturbed lands in parks requiring restoration. The NPS currently has as estimated 3,000 abandoned mineral sites with over 11,000 hazardous openings, at least thirty miles of streams with degraded water quality, and more than 33,000 acres of impaired lands due to previous mineral extraction located in parks.

The NPS continues to address the restoration needs of abandoned mine lands (AML) within the parks. In FY 2000, the NPS is performing reclamation projects in twelve parks. These projects include surface reclamation; watershed restoration; adit and shaft closures; and safety projects at numerous parks, eleven of these are new AML reclamation projects initiated during fiscal year 2000. Examples include: (1) effecting mine closures and bat gates at Buffalo National River, Saguaro National Park, and Wrangell-St. Elias National Park and Preserve, (2) stabilization, debris removal, and revegetation of mined areas in Great Basin and Joshua Tree National Parks, Sleeping Bear Dunes National Lakeshore, and Whiskeytown National Recreation Area, and (3) site assessment and restoration planning at Allegheny Portage Railroad National Historic Sites, and Mojave National Preserve.

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Disturbed land restoration associated with abandoned mineral development activities on park lands supports the achievement of the Service's long-term goal Ia1: Disturbed Lands/Exotic Species.

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FY 2000 Servicewide Mitigation and Restoration Activities	Project/Operation	Number of Parks Affected
Mineral Development	Non-Federal Oil and Gas Exploration, Production and Site Reclamation	33 operations in 5 parks
Mineral Development	Mining Claims Access, Mineral Extraction and Site Reclamation	3 parks
Abandoned Mine Land	Small abandoned mineral site reclamation, clean-up, surface restoration, and safety projects	10 parks
Abandoned Mine Land	Small disturbed lands restoration, recontour, revegetation projects	6 parks
Abandoned Mine Land	Large-scale disturbed lands restoration and rehabilitation projects	8 parks
Evaluate Development Proposal	Federal Oil and Gas Well Drilling and Production	1 park
Evaluate Development Proposal	Surface and Underground Mining and Reclamation	10 parks

FY 1999 Evaluation of Mineral Development Proposed Adjacent to Park Lands	Number of Proposals	Number of Parks Affected
Federal Oil and Gas Well Drilling and Production	1	1
Surface and Underground Mining and Reclamation	10	10

The NPS is continuing to protect and secure water resources necessary to preserve park natural resources, restore water conditions that have been adversely effected by human influence, and ensure that water is available to meet visitor needs. This support is provided through technical and scientific evidentiary assistance; maintenance of water rights records; participation in administrative, judicial, and other water rights proceedings; and verification of water rights and uses as required. Servicewide assistance is being provided in FY 2000 to more than 60 parks where water rights actions are underway. Assistance is also being provided to a number of parks in connection with major water rights actions in the States of Arizona, Colorado, Nevada, Oregon, and Utah. Projected NPS FY 2000 water rights technical assistance involvement, based on FY 1999 workload, are summarized below.

FY 2000 Water Rights Projected Accomplishments Type Action (based on FY 1999 Workload)	Number of Actions	Number of Parks Affected
Water Rights Applications Evaluated for Impacts to NPS Resources Protected Using State Laws	216	11
Water Rights Applications Protested Using State Laws	46	4
Settled or Protected and Withdrawn	1	1
Adjudications in Progress (NPS Participating)	38	48

In FY 2000, the NPS will continue its activities in other water resources areas, including the assessment and protection of water quality, floodplain management, groundwater analysis, watershed and wetlands protection,

water resources management planning, and fisheries management. Servicewide funding will continue to support park projects to assess and restore water quality, map and restore wetlands, conduct hydrologic investigations, and carry out watershed and fisheries management planning. In FY 2000, the NPS is expected to respond to nearly 500 park technical assistance requests -- based on experience in FY 1999 -- to address a wide range of water resource concerns identified by park managers. Examples of these technical assistance activities include assistance in the development of an annual operating plan for dams on the Lower Colorado River, affecting four units of the National Park System in Utah, Arizona, and Nevada; planning for restoration of the Elwha River in Olympic National Park; the evaluation of groundwater issues at Cape Cod National Seashore; and assessments of water quality concerns at Biscayne National Park, San Antonio Missions National Historical Park, and Lake Mead National Recreation Area. Water resource management activities addressing park ground and surface waters support the achievement of the Service's long-term goals Ia1: Disturbed Lands/Exotic Species and Ia4: Water Resources.

Field assessment of water and riparian resources at Natchez Trace Parkway

Performance Goals

Long-term Goal Ia1	By September 30, 2005, 10.1% of targeted parklands, disturbed by development or agriculture as of 1999 (22,500 of 222,300 acres), are restored; and Ia1B -- exotic vegetation on 6.3% of targeted acres of parkland (167,500 of 2,656,700 acres) is contained.
Annual Goal Ia1	By September 30, 2001, 2% of targeted parklands, disturbed by development or agriculture, as of 1999, are restored; and exotic vegetation on 1.3% of targeted acres of parkland is contained.
Long-term Goal Ia4	By September 30, 2005, 85% of parks have unimpaired water quality.
Annual Goal Ia4	By September 30, 2001, 65% of parks have unimpaired water quality.

Natural resources within parks and the ecosystem processes upon which they are dependent are also effected by activities occurring outside park boundaries over which the NPS does not exercise control. Based primarily at the park-level, the NPS is continuing to identify potential external sources of direct and indirect impacts to park resources throughout FY 2000 and to work with other Federal, State and local entities to avoid or reduce and mitigate impacts, including thorough reviews of planning proposals, permit requests, and environmental documents.

Under the Oil Pollution Act of 1990 and the National Contingency Plan, the NPS is continuing to develop plans and strategies to protect park resources following the release of oil or hazardous chemicals, often from sources outside the park. The Park Service is also conducting damage assessments and restoration plans for natural resources injured by these incidents as part of the Secretary’s natural resource trust responsibilities under Federal law. The NPS is continuing to seek compensation for resources damaged by third parties and retain recovered funds for use in restoration or replacement of injured resources pursuant to Public Law 101-337 and Public Law 104-333.

FY 2001 BUDGET REQUEST

	2001 Budget Request	Program Changes (+/-)
▪ Natural Resources Management $(000)	129,995	+19,401

The FY 2001 request for Natural Resources Management is $129.995 million, which represents an increase of $21.227 million over the FY 2000 enacted level. The FY 2001 proposed programmatic increase of $19.401 million to Natural Resources Management activities includes:

	$(000)
▪ Park Base Operations Increase	3,987
▪ Regional Office Park Support	130
▪ Alaska Subsistence Fisheries Management Projects	734
▪ Alaska Natural Resource Projects	150
▪ Invasive Species Control/Threatened and Endangered Species Recovery at Parks	3,400
▪ Inventory and Monitoring - Vegetation Mapping	1,750
▪ Inventory and Monitoring - Vital Signs Monitoring	4,200
▪ Water Resources Restoration and Protection	825
▪ Water Quality Monitoring	1,275
▪ Improve Air Quality/Reduce NPS Air Emissions	200
▪ Natural Resources Data Management and Distribution	1,250
▪ California Desert Restoration	1,500
Total	19,401

Justifications for these increases are included at the end of this subactivity's presentation.

C. Everglades Restoration and Research
FY 2000 Estimated Program and Anticipated Accomplishments

Enacted: $8,708,000

This activity represents the continuation of the Interior Department's 5-year Critical Ecosystem Studies Initiative (CESI). This is the Department's contribution in support of science and research programs focused on meeting the Everglades restoration goals established by the South Florida Ecosystem Restoration Task Force. The Critical Ecosystem Studies Initiative supports work to provide information on the hydrological and ecological requirements of a healthy ecosystem that form the basis for the first goal of the task force: get the water right, in terms of quality, quantity, timing, and distribution. This program supports a science partnership between thirty Federal, State, local, and Tribal governments to develop the knowledge base needed for meeting the two other ecosystem restoration goals of the task force: Restore and enhance the natural system; and, transform the built environment. Established in 1997, the CESI program has added significantly to information needed for restoration planning in terms of hydrological and ecological simulations of water management changes and indicator species habitat requirements. The 1998 CESI program added additional studies to: (1) plan and implement water quality improvement technologies, (2) complete regional scale landscape ecology projects, (3) develop control strategies for exotic

species, and (4) begin the integration of ecosystem restoration efforts with adjacent land use impacts on the man-made environment of South Florida. The 1999 program added four new topical areas that include: (1) the completion of an integrated interagency science plan and peer review workshops, (2) expanded landscape scale projects to examine patterns, processes, and regional scale modeling, (3) begin assessments of the influence of contaminants and biogeochemical processes, and (4) the development of improved integration of scientific databases and geo-spatial analyses. Work will be completed on linking macro- and micro-scale hydrologic/vegetation models in the southern and eastern mangrove communities and completion of a model of freshwater inflow into eastern Florida Bay. As work is completed, emphasis will shift to the western part of the Everglades and to the broader coastal ecosystems of the east and west coasts of southern Florida.

The Critical Ecosystem Studies Initiative for Everglades restoration as presented in the table and described below summarizes the FY 2000 program and the program at the FY 2001 base level.

Everglades Restoration – Critical Ecosystem Studies Initiative	**FY 2000**	**FY 2001**
Ecosystem Restoration Planning	$217,000	$593,100
Ecosystem Science Planning and Peer Review	182,000	346,100
Ecological Modeling - Refinement and Applications	677,000	889,200
Selective High Density Topographic Surveys	538,000	630,700
Ecological Processes and Indicator Species	1,112,000	1,261,300
Landscape Patterns, Processes, and Modeling	909,000	630,700
Linkage of Macro- and Micro-Scale Hydrologic Models with Communities	677,000	0
Hydrologic Modeling for Everglades Restoration	0	788,300
Coastal and Estuarine Ecosystems	1,147,000	946,000
Contaminants and Biogeochemical Processes in Inland and Coastal Systems	909,000	567,600
Water Quality Improvement Technology	227,000	0
Water Quality Enhancement and Monitoring on Tribal Lands	454,000	0
Water Quality Improvement Technology and Monitoring	0	592,800
Invasive Species Control Strategy	227,000	94,600
Science Information Synthesis and Dissemination	632,000	283,800
Water Resources Planning, Impact, and Mitigation Assessment	0	283,800
Subtotal	$7,908,000	$7,908,000
South Florida Ecosystem Restoration Task Force, Office of Executive Director	800,000	800,000
Total	$8,708,000	$8,708,000

Ecosystem Restoration Planning ($593,100) - For the past several years the task force and working group have been working on a strategy to integrate the many Federal, State, and Tribal ecosystem restoration efforts planned or underway. This integrated strategy emphasizes the interrelationships of the natural and human environment, i.e., restoration is more than replumbing the water systems. It also strives to include the local governments, the business community, and minority communities -- key ecosystem partners with whom coordination had not previously been done. The integrated strategy will document a common vision and goals, facilitate collaborative, coordinated, incentive-based actions to fulfill them, and create a system to track progress. It will serve as the framework for restoration and sustainability for the next 50 years. Primary tasks for FY 2000 include finalizing consensus on the 16 county (systemwide) goals. In addition, a symposium and a series of roundtables of national and Florida experts will be conducted to develop strategies to accomplish restoration. Development of performance measurements will also begin in FY 2000. When complete, this regional integrated strategy will better define the very broad restoration goals and performance measures upon which the Outcome-Based Strategic Plan and subsequent annual performance plans will be based.

Ecosystem Science Planning and Peer Review ($346,100) - A key component of the South Florida Ecosystem Restoration initiative is the regular convening of outside review of the science program and its projects. The South

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Florida Ecosystem Restoration Task Force, its interagency Working Group and Science Coordination Team (SCT) will continue to review and coordinate scientific investigations and conduct independent peer reviews, workshops and symposiums on South Florida restoration-related topics. Numerous scientific workshops were held in 1998 and 1999 including Ecotoxicity and Risk Management in Restored Ecosystems, Seagrass Modeling Workshop, Sustainable Agriculture and Ecosystem Restoration, Endangered Species Protection such as the Cape Sable Seaside Sparrow Workshop and Review, and an interagency South Florida Ecosystem Restoration Science Forum. Some of the upcoming local workshops for FY 2000 include: Hydrologic and Hydrodynamic Modeling; Populations, Ecological Processes and Landscapes; and the annual Florida Bay Symposium, and a new initiative with the National Academy of Sciences to review the science effort and provide advice to the task force. All local workshops generally include local scientists and resource managers working in the South Florida area, and an external peer review panel. The external panels produce reports which provide guidance to the science coordination team and agency staff in evaluating the quality of their science, and identifying critical monitoring and research needs to support decision-making by local managers and policy makers. The requested funds to support the National Academy of Science panel represent one-third of the requirement and are programmed to be matched by other task force members. The panel will provide quarterly reports to the task force and conduct additional detailed studies as tasked by the task force. This interagency planning and implementation process helps to design the needed long-term monitoring and research studies and the development of predictive models that guide us on the selection of alternative management plans, proposed implementation actions, and the specific engineering design for numerous ecosystem restoration initiatives.

Ecological Modeling – Expansion, Refinement and Applications ($889,200) - Simulation-based planning and decision-making rely on the accuracy and scope of ecological models, particularly the Across Trophic Level Systems Simulation (ATLSS) models. These models help define the relationship between water levels, water quality, fish, wildlife, and vegetation at the individual, community, and landscape level. Evaluation of water management alternatives can only be accomplished with simulation of the response of key biotic elements of the ecosystem to changes in water delivery amount and timing. Ecological models that are continuing development for on-line implementation in 2001 include: additional species-specific models for the snail kite, the American alligator and crocodile, and the Florida panther, as well as individual and community-based models for freshwater fish and macro-invertebrates, four additional species of wading birds, and several small mammals. In 2001 and beyond, the ecological modeling program will continue to integrate mangrove and coastal, and nearshore communities (including the Florida Keys). Additional research will also done to refine the linkage between vegetative production and succession, water quality, and hydrological models. The degree to which models can be used to accelerate the adaptive management process will depend on their developed scope and the empirical data provided by other programs [see Landscapes, Ecological Processes/Indicator Species, Coastal Ecosystems, Hydrologic Modeling].

Selective High Density Topographic Surveys ($630,700) - Accurate predictions of the hydrologic effects of restoration actions depend on sophisticated hydrologic models, which require highly accurate elevation data. As specific restoration projects come online, high-resolution site-specific elevation data will be necessary to more closely define ecosystem response to changes in hydrologic conditions, and to assess and refine information on specific restoration actions/works. Standard topographic data and techniques do not offer the degree of resolution needed, and are not accurate enough in the low relief terrain that is characteristic of South Florida. The extensive mangrove zone and inland marshes make logistics and data collection difficult, presenting a unique set of problems in accomplishing data acquisition on a landscape scale. Helicopters are often the only option for data collection. Despite these obstacles, twenty-one quads have been completed with 15 more in progress. Completed quads are concentrated in the east and southeastern Everglades. Modelers need additional data for much of the western Everglades, Big Cypress area, the Greater Everglades systems, and the northern Everglades. Additionally, hydrologic models require higher density of information around certain critical features. Research is underway to test new techniques, which have promise to increase the density of data collection in certain types of Everglades environments.

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Ecological Processes and Indicator Species ($1,261,300) - Research in this program area addresses biological data needed for the ATLSS modeling effort, for development of science-based performance criteria, and for design of species monitoring programs to track restoration success. Ecological process and indicator species studies in FY 1999 and FY 2000 have focused on the abundance, distribution, and diversity patterns of key plants and animals and their critical habitat factors. Studies have included wading birds, alligators, crocodiles, fish, plants, and invertebrates that characterize the South Florida ecosystem. A significant amount of information is still needed concerning the ecology of mangroves, the responses of key habitats to changes in hydroperiods, response to changes in fire patterns, and the biogeochemistry of soil formation. Site-specific research plots, developed in 1997 and 1998, are being used to establish permanent reference stations to track natural versus man-induced variability. Additional support is also needed to increase the number of permanent reference stations that will play an important role in monitoring changes in plant and animal communities and populations in response to water management changes implemented for restoration purposes. Key ecological processes and indicator species will continue to be the focus in 2001 for assessing the response of the ecosystem to restoration activities that include changes in water quality, amount, timing, and duration of water deliveries. Additional research is necessary to complete current studies, refine the research to more closely link species-specific responses to actual restoration changes, and refine region-wide monitoring programs to accomplish monitoring and assessing of ecological responses on a landscape scale. Much of the species and ecological process data also serves as the foundation for the ATLSS ecological models where specific models of indicator species have been developed and used for assessing alternatives for restoration. Additionally, it will provide a set of science-based performance measures to be used by resource managers and decision-makers during the period of restoration implementation.

Landscape Patterns, Processes, and Modeling ($630,700) - As a complex mosaic of coastal, wetland, and upland habitats, the Everglades ecosystem is dynamic, and animal and plant populations respond differently to disturbance, both natural and man-made (e.g., fire, flood, drought, hurricanes, etc.). The purpose of this program is to link the Everglades mosaic on a landscape scale to permit an evaluation of large-scale environmental changes on interacting populations and communities of plants and animals. The goal is to develop a regional model of ecosystem response to assess changes in water management, application of fire management, and changes in water quality. Landscape scale research and modeling program is integral to the synthesis of ecological, vegetation, trophic level, hydrologic and biogeochemical information into the decision-making process. The purpose of this effort is to give resource managers the tools to evaluate broad spatial trends in habitats and populations, and assess management options and their implications at the broader regional/landscape scale. This program is important in the integration of localized information on vegetation, animal population dynamics, hydrologic regime, and biogeochemical cycles into a comprehensive view of the state of the ecosystem. Recent and newly emerging technologies allow for addressing landscape-scale restoration issues. Region-level assessment of landscape elements, fauna and habitats unique to the Everglades are being initiated in FY 2000 employing the gap analysis technique pioneered by the U.S. Fish and Wildlife Service. These efforts will continue in FY 2001 as part of the program to give resource managers models and tools to evaluate the results of restoration activities and their implications at the broad regional/landscape scale.

Hydrologic Modeling for Everglades Restoration ($788,300) - Because of its unique geology and terrain, hydrological processes in the Greater Everglades ecosystem are complex and a key physical factor in shaping its ecology. An understanding of land-water relationships is essential in devising water management plans that will promote restoration of the ecosystem. Studies have been conducted in FY 1997 through FY 2000 to develop information on the complex hydrological processes in the southern inland coastal of the southeastern Everglades. Most of the effort focused primarily on refining the knowledge of physical processes in the eastern and southern Everglades regions, providing support to linking physical models being developed in Florida Bay. These include canal and wetland flow and water transport interaction, effects of wind on surface water flows, vegetation resistance to flow, surface water and groundwater interactions, and freshwater discharge to Florida Bay. As research and modeling for the southeastern Everglades is completed, work will shift to the western watershed and western coastal areas. Additional research is also necessary to model the linkage between site-specific plant community responses and existing and restored hydrologic conditions. This research will require the collaborative

involvement of biological and physical scientists to not only develop the micro-scale linkage between hydrology and the biota, and develop linkages between local hydrologic changes and response of individual parts. It will also integrate local- and community-scale data into regional-scale information necessary for informed water management in the natural systems.

Coastal and Estuarine Systems ($946,000) - Because of its unique geology and terrain, hydrological processes in the Greater Everglades ecosystem are complex and a key physical factor in shaping its ecology. An understanding of land-water relationships is essential in devising water management plans that will promote restoration of the ecosystem. Studies have been conducted in FY 1997 through FY 2000 to develop information on the complex hydrological processes in the southern inland coastal of the southeastern Everglades. Most of the effort focused primarily on refining the knowledge of physical processes in the eastern and southern Everglades regions, providing support to linking physical models being developed in Florida Bay. These include canal and wetland flow and water transport interaction, effects of wind on surface water flows, vegetation resistance to flow, surface water and groundwater interactions, and freshwater discharge to Florida Bay. As research and modeling for the southeastern Everglades is completed, work will shift to the western watershed and western coastal areas. Additional research is also necessary to model the linkage between site-specific plant community responses and existing and restored hydrologic conditions. This research will require the collaborative involvement of biological and physical scientists to not only develop the micro-scale linkage between hydrology and the biota, and develop linkages between local hydrologic changes and response of individual parts. It will also integrate local- and community-scale data into regional-scale information necessary for informed water management in the natural systems.

Contaminants and Biogeochemical Processes in Inland and Coastal Systems ($567,600) - Because of its unique geology and terrain, hydrological processes in the Greater Everglades ecosystem are complex and a key physical factor in shaping its ecology. An understanding of land-water relationships is essential in devising water management plans that will promote restoration of the ecosystem. Studies have been conducted in FY 1997 through FY 2000 to develop information on the complex hydrological processes in the southern inland coastal area of the southeastern Everglades. Most of the effort focused primarily on refining the knowledge of physical processes in the eastern and southern Everglades regions, providing support to linking physical models being developed in Florida Bay. These include canal and wetland flow and water transport interaction, effects of wind on surface water flows, vegetation resistance to flow, surface water and groundwater interactions, and freshwater discharge to Florida Bay. As research and modeling for the southeastern Everglades is completed, work will shift to the western watershed and western coastal areas. Additional research is also necessary to model the linkage between site-specific plant community responses and existing and restored hydrologic conditions. This research will require the collaborative involvement of biological and physical scientists to not only develop the micro-scale linkage between hydrology and the biota, and develop linkages between local hydrologic changes and response of individual parts. It will also integrate local- and community-scale data into regional-scale information necessary for informed water management in the natural systems.

Water Quality Improvement Technology and Monitoring ($592,800) - This program category merges two categories from previous budget requests. The funds for FY 2001 are requested to continue water quality research and monitoring within the South Florida ecosystem, with a priority to meet needs on Tribal lands. Technology using biological alternatives for water quality enhancement is greatly improving. Since inflows to the Greater Everglades must meet very stringent water quality standards that protect these sensitive, nutrient depleted wetlands, continued monitoring and additional research is necessary to assess as well as enhance existing and emerging water quality improvement technologies. The linkage of macrophyte treatment technology with algal treatment technology may allow for developing a merged algal-periphyton treatment system that may emulate water quality conditions in the southern Everglades. Additional research is necessary to assess management options for increasing efficiency of the macrophyte or combined macrophyte/algal treatment systems. Prior to FY 2000, funds were used to install automatic water quality samplers and to collect water quality and nutrient data on Tribal lands beginning in late 1997. The Seminole Tribe completed the initial design for farm-scale wetland

treatment systems, and conducted studies that describe the total phosphorus loads for sites on their reservation lands, including studies of the water quality impacts on forested wetlands. The Miccosukee Tribe of Indians will use its portion of the FY 2000 funds to conduct studies to support advanced water quality treatment for their lands and acquire equipment to improve their testing program. A small-scale pilot project will be initiated in FY 2000 to assess the efficiency of using a periphyton treatment system in reducing phosphorus concentrations in canal water. Funding in FY 2001 will continue to support water quality studies on forested wetlands, research and small-scale pilot projects to refine construction and operation of biological treatment for improvement of water quality, particularly in support of ongoing Tribal initiatives.

Invasive Species Control Strategy ($94,600) - The spread of invasive exotic plants and animals represents one of the greatest threats to successful South Florida ecosystem restoration. Over 285,000 acres in the park have been adversely affected. Without an integrated plan to control these exotic species, recovery of the protected species may not be possible. Exotic species such as melaleuca, Brazilian pepper, Old World climbing fern and Australian pine are all species that have been shown to degrade the quality of native habitats that are essential habitat for listed species such as the Florida scrub-jay, Florida panther, Key deer and sea turtles. State, Tribal, Federal and local governmental programs are addressing new facets to the invasive control program through biological, chemical or mechanical control mechanisms. A unified strategy for the control of exotic species is essential for the recovery of threatened and endangered species as well as the success of the South Florida restoration. The funding in 2000 will be used to complete the Assessment Methodology System and interagency strategy to improve the integration of the various agency exotic plant control programs. Funding in 2001 will be used to develop the Weed Risk Assessment System to guide the implementation of the strategy and continue research efforts, which will assist the task force in the development of a strategy for the control of exotic animals.

Science Information Synthesis and Dissemination ($283,800) - This program was established to develop a standardized data storage and retrieval system for all of the projects funded under the CESI program. Funding during 2000 will continue the development of this data management system and improve the efficiency of data retrievals by establishing an electronically linked or centralized database. Database development started with physical sciences data because of its relatively simple format. Work in 2001 will continue development of the database access interface for better accessibility to restoration-related data sets from other State and Federal agencies funded outside of CESI. Timely dissemination of the most up-to-date data and information will give all agencies involved in the restoration access to the data needed to make time-sensitive evaluations and decisions regarding restoration activities. It will, for example, provide them with information so that agency actions taken to implement ecosystem restoration plans can be consistent with the recovery needs of threatened and endangered species.

Water Resources Planning, Impact, and Mitigation Assessment ($283,800) - South Florida ecosystem restoration takes place amidst six million current inhabitants, 16 counties, over 250 cities, and ranges over approximately 18,000 square miles. Planning, design, construction, and monitoring of specific projects, particularly those related to the C&SF Restudy, can be more successful through improved site-specific and baseline analyses of current and future resource usage. The National Environmental Policy Act, various Water Resource Development Acts, and State, regional and local processes require social impact assessment and public engagement as restoration projects are formulated. All relevant ecological, cultural, and socio-economic benefits and costs must be assessed as part of this process. Specific research projects relating to environmental economics, demographic and community studies, resource valuation, planning and environmental justice, and public involvement and education, are outlined in a 1999 Action Plan developed by South Florida Ecosystem Restoration Task Force's Science Coordination Team (SCT) and Working Group. The plan emerged as the working document from a 3-day workshop held in February 1998 in Miami, Florida. The requested funds for FY 2001 will be used to support critical items in the plan in partnership with other agency programs. This portion of the action plan is aimed at maximizing mutual benefits of resource and socio-economic factors while improving the overall feasibility, acceptability and implementation of ecosystem restoration projects within the resource, socio-political and economic landscape.

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Restoration Initiative Support: To support DOI responsibilities in ecosystem restoration including its role as chair of the South Florida Ecosystem Restoration Task Force which is responsible for coordinating and integrating the activities of the participating Federal, State, and Tribal agencies, $800,000 was provided in FY 2000. The Water Resources Development Act of 1996, directs the task force and working group to implement procedures to facilitate public participation in the advisory process and to maintain records and make the proceedings of meetings available for public inspection. It also requires the task force to submit biennial reports to Congress, summarizing program activities, the policies, strategies, projects, and priorities developed or implemented, and the progress made toward the restoration.

DOI Mission Goals

Mission Goal 1	The spatial extent of wetlands will be sufficient to support the historic functions of the greater Everglades ecosystem.
Mission Goal 2	The diversity, abundance and behavior of native plants and animals in South Florida will be characteristic of predrainage conditions.
Mission Goal 3	Estuarine and coastal areas function as a natural, healthy part of the ecosystem.
Mission Goal 4	Natural hydrologic functions in wetlands are restored while providing for the water resource needs of the urban and agriculture landscapes and the estuarine and marine systems.

FY 2001 BUDGET REQUEST

	2001 Budget Request	Program Changes (+/-)
▪ Everglades Restoration and Research $(000)	9,227	+500

The FY 2001 request for Everglades Restoration and Research is $9.227 million, which represents an increase of $0.519 million over the FY 2000 enacted level. The FY 2001 proposed programmatic increase of $0.500 million to Everglades Restoration and Research activities includes:

	$(000)
▪ South Florida Ecosystem Restoration Task Force	500
Total	500

Justification for this increase is included at the end of this subactivity's presentation.

D. Cultural Resources Applied Research
FY 2000 Estimated Program and Anticipated Accomplishments

Enacted: $16,989,000

The National Park Service conducts a program of basic and applied research in accord with current scholarly standards, to support planning, management, and interpretation of park cultural resources. The principal goals of the mission-oriented research are:

- to identify, evaluate, document, and determine the significance of cultural resources;
- to acquire a systematic and fully adequate park information base;

Park Management/Resource Stewardship

- to develop appropriate methods and technologies to inventory, document, monitor, preserve, protect, and maintain cultural resources;
- to ensure appropriate treatment and interpretation of cultural resources;
- to develop appropriate approaches to conserving park resources; and
- to work with partners in the academic and preservation communities to ensure and acquire the knowledge base necessary to meet NPS stewardship and education goals.

Resources often are threatened by the lack of basic resource information needed to meet these goals. The lack of up-to-date, detailed, systematic data about resources and their problems continues to impair the proper management of resources.

Cultural resources research responsibilities include: (1) completing historic resource studies, park administrative histories and other historical studies, (2) providing for National Register of Historic Places documentation, (3) preparing historic structure reports to guide park management in treatment and use decisions, (4) preparing cultural landscape reports to determine appropriate treatment and use, (5) providing basic archeological identification, evaluation, and documentation of resources in all parks and providing National Register listing, as appropriate, (6) completing museum collection management plans, collection storage plans, and collection condition surveys, (7) completing documentation (cataloging) for all museum objects, (8) completing basic ethnographic surveys and field studies in parks, and (9) completing ethnographic overviews and assessments to identify relationships with Native Americans and other ethnic groups associated with park resources.

Inventory and Evaluation Systems

Servicewide cultural resource inventory systems manage and maintain the data obtained through research. These systems provide the basic information necessary for park facility planning and development proposals, including information necessary to comply with archeological, environmental, and historic preservation mandates. Further, basic information is provided which is used to determine appropriate and cost-effective strategies for managing, preserving, maintaining and interpreting cultural resources.

Current inventory systems are Cultural Landscapes Inventory, Cultural Resources Management Bibliography, Cultural Sites Inventory (i.e., Archeological Resources Inventory and Ethnographic Resources Inventory), List of Classified Structures, and National Catalog of Museum Objects. A number of the applied cultural resource activities are related to building and improving these inventory systems.

Archeological Resources

The NPS gives priority to its national program, established in FY 1992, to identify, evaluate, and document archeological resources located in units of the National Park System. These resources range from Cliff Palace, a visually spectacular cliff dwelling ancestral pueblo site at Mesa Verde National Park in Colorado; to the Fort Hill site, a national historic landmark prehistoric settlement at Cape Cod National Seashore that includes the remains of a Nauset Indian village visited by Samuel Champlain in 1604 and also contains archeological deposits dating back thousands of years; to historic period archeological deposits at Klondike Gold Rush National Historical Park that contain information about Americans'

Fort Frederica National Monument, an 18th century archeological site (Photo courtesy Ed Matthews)

fascination with the last geographical American frontier. The program supports systematic research to locate, evaluate, and document archeological resources; to nominate archeological properties to the National Register of Historic Places; and to recommend strategies for their interpretation, management, preservation, and protection, which contributes to NPS achievement of long-term goal Ib2A (Archeological Resources).

The automated Archeological Sites Management Information System (ASMIS) used to calculate the baseline data in FY 1997 was estimated to have a data entry backlog totaling 60 percent of the known sites. A Microsoft Windows application of ASMIS (i.e., Version 2.00) was issued in FY 1999 to help facilitate entry of park data. Approximately 75 percent of all known sites were recorded at the end of FY 1999. A major focus in FY 2000 is to eliminate the backlog and continue entering all new sites into this system.

Documentation of current condition and threats to *in situ* archeological resources in park areas is used to determine where and when further actions are needed to help maintain sites in good condition. These actions assist in meeting long-term goal Ia8, i.e., 50 percent of the recorded archeological sites are in good condition by 2005. This effort includes recording standard information about each site systematically and electronically so that park, regional, and national management databases can be utilized for budget and management control. A significant upgrade to ASMIS (i.e., Version 2.01, release FY 2000) will facilitate documentation, especially the history of the condition of a site.

The estimated total number of sites is based on information provided by NPS archeologists. The difference between the number of sites in the Archeological Sites Management Information System database and the total number of recorded sites is the number of records still in paper format or an electronic format that has not yet been converted to the ASMIS database structure. The number of archeological sites listed on the National Register of Historic Places has been variously reported Servicewide. A goal of FY 2000 is to distinguish among archeological sites and districts, contributing properties, and sites that have been counted because the park unit is listed on the National Register.

The program is funded through the Cultural Resources Preservation Program -- the Archeological Resources Inventory and Cultural Resources Preservation Program base funding. Other programs that affect archeological resources (e.g., planning, construction, operations, cyclic maintenance, and fire management) also fund inventory and evaluation activities. In FY 2000, Servicewide funding for the archeological resources inventory was increased to $2.4 million.

The numbers that appear for the performance goals below represent information received as of December 1, 1999, from a Servicewide call for data. The estimates are based on current levels of funding and support. Reports by NPS park units and requests for funding increases, provided elsewhere, will affect the estimates.

Performance Goals

Long-term Goal Ib2A	By September 30, 2005, the 1999 baseline inventory and evaluation of each category of cultural resources is increased by 30%. [From the FY 1999 baseline of 48,188 to 62,644]
Annual Goal Ib2A	By September 30, 2001, the number of sites recorded in the Archeological Sites Information Management System is increased by 10%. [From FY 1999 baseline of 48,188 to 53,006]

Archeological Resources Performance Information	FY 1999 Actual	FY 2000 Estimate	FY 2001 Estimate
Recorded sites with electronic records in ASMIS	48,188	50,957	53,006
Percent increase from the number of sites recorded in FY 1999 in ASMIS	(up 10% from FY 1998 actual)	5%	10%

Park Management/Resource Stewardship

Park Management/Resource Stewardship

Archeological Resources Workload Factors	FY 1999 Actual	FY 2000 Estimate	FY 2001 Estimate
Estimated archeological sites	1,500,000	1,500,000	1,500,000
Recorded archeological sites (ASMIS and paper)	63,000	66,000	72,000
Archeological sites listed on the National Register of Historic Places	8,175	8,200	8,300
Acres of park land with some level of archeological inventory. [This number is the FY 1998 actual that is provided in the Secretary's Report to Congress, a biannual publication on the status of the government-wide Federal Archeology Program.]	7,219,000	7,275,000	7,325,000

Ethnographic Resources

Ethnography focuses on the identification and documentation of present-day people with long-term associations to existing or proposed parks and on the cultural and natural resources they invest with traditional cultural meaning. These resources include mountaintops, baptismal sites, urban neighborhoods, fisheries and terrestrial subsistence areas and other places and landscapes that define a group's ethnic history and identity. Data on these resources and the people who value them is required for culturally appropriate and effective resource management and planning, and for establishing mutually beneficial alliances with the associated communities.

K. Trefon with large pike and whitefish, mouth of Chulitna River, 1928, Lake Clark National Park and Preserve (NPS photo)

The national strategy for inventorying ethnographic resources, designed in FY 1998, is used to identify, evaluate, and document ethnographic resources. Ethnographic records are now being entered into the Ethnographic Resources Inventory (ERI) database, and the baseline number of ERI records (i.e., 400) was set in FY 1999.

Funding for the Ethnographic Resources Inventory is provided by the Cultural Resources Preservation Program. Additional funding may be provided by other programs (e.g., planning, natural resources, etc.) that affect ethnographic resources. Funding for ethnography projects helps provide data that are used to identify and record resources of long-term interest to groups who imbue such resources with cultural meaning.

Differences in numbers for the performance goals between the Servicewide ERI database and NPS park unit data, provided elsewhere, is the result of the newly established programmatic approach to the identification of ethnographic resources. One of the goals of FY 2000 is to provide information and training to park service personnel. Reports by NPS park units and requests for funding increases, provided elsewhere, will affect the estimates.

Park Management/Resource Stewardship

Performance Goals

Long-term Goal Ib2E	By September 30, 2005, the number of ethnographic resources entered into the Ethnographic Sites Inventory is increased by 735%. [From FY 1999 baseline of 400 to 2,938]
Annual Goal Ib2E	By September 30, 2001, the number of ethnographic resources in the Ethnographic Resources Inventory is increased by 312%. [From FY 1999 baseline of 400 to 1,246]

Ethnographic Resources Performance Information	FY 1999 Actual	FY 2000 Estimate	FY 2001 Estimate
Number of ethnographic resource electronic records in Ethnographic Resources Inventory.	400	823	1,246

Historical Research

A primary manner in which the National Park Service conducts historical research is through the completion of park historic resource studies, administrative histories, and special history studies. The primary performance indicator for the History Program is historical research based upon primary and other sources and evaluated through a peer review process built on cooperative relationships with partners in the academic and preservation communities. Historians apply analytical skills and their knowledge of American history to help further the National Park Service mission to understand, preserve, protect, and interpret important cultural resources under and outside of the Service's jurisdiction.
Specialized tasks undertaken by National Park Service historians include the following:

- conducting research on historical topics and properties;
- conducting field surveys on historic properties;
- preparing National Register documentation for park resources;
- evaluating historical studies and documentation;
- developing interpretive programs based on current historical scholarship; and
- providing advice, guidance, and technical assistance on historical topics and preservation issues.

The historic resource study is the primary research document that provides historical information for the identification, evaluation, nomination to the National Register of Historic Places, management, and interpretation of historic properties. Historic resource studies provide essential knowledge to further the park visitor's educational experience and ensure that the Service's management of park historic resources reflects the rich diversity represented by these resources.

The results of historical research serve the American people through the creation of studies that allow for the informed management of resources while contributing to the public understanding of history. Historic resource studies completed or begun during FY 1999 include studies for Katmai National Park, Wrangell-St. Elias National Park, and Sitka National Historical Park. The NPS needs research with a broad scope to maintain the knowledge base necessary to manage and interpret the complex array of properties within the National Park System.

In FY 2000 and FY 2001, a total $915,000 will be allocated to fund an estimated eighteen historic resource studies from the historic resource study priority list.

Park Management/Resource Stewardship

Performance Goals

Long-term Goal Ib2F	By September 30, 2005, add 90 parks to the FY 1999 baseline of 27 that have a current Historic Resource Study and Administrative History [117 of 379 parks or 31%].
Annual Goal Ib2F	By September 30, 2001, add 30 parks to the FY 1999 baseline of 27 that have a current Historic Resource Study and Administrative History.

Historical Research Workload Factor	FY 1999 Actual	FY 2000 Estimate	FY 2001 Estimate
Number of parks with current Historic Resource Studies and Administrative Histories	27	42	57

Cultural Landscapes

Ebey's Landing National Historical Reserve

Cultural landscapes range from large rural tracts covering several thousand acres, such as the Gettysburg battlefield and the Blue Ridge Parkway, to designed landscapes of less than two acres, such as Frederick Law Olmsted's home and studio. Cultural landscapes provide the physical environment associated with historical events and reveal aspects of our country's origins and development through their form, features, and use. They also illustrate the relationships among park cultural and natural resources. The NPS defines a cultural landscape as "a geographic area, including both cultural and natural resources and the wildlife or domestic animals therein, associated with a historic event, activity, or person, or exhibiting other cultural or aesthetic values." There are four general kinds of cultural landscapes, not mutually exclusive: historic sites, historic designed landscapes, historic vernacular landscapes, and ethnographic landscapes. As of the end of FY 1999, a total of 2,067 landscapes have been identified.

Through applied research, information necessary for park management decisions concerning treatment and use of cultural landscapes is obtained and provided to park managers. Research defines the characteristics, features, values, and associations that make a landscape historically significant. This information is collected, analyzed, and organized through a variety of means, discussed below.

• *Historic Resource Study* - The Historic Resource Study documents the thematic context sufficient to evaluate historical, aesthetic, technical, or scientific associations of landscapes and contains enough information about the developmental history or evolution of each landscape to evaluate its integrity, and enough information about the contributing environment of each landscape to enable National Register documentation to be prepared. Historic resource studies are usually prepared by support office or cultural resource center staff or under contract.

• *Cultural Landscapes Inventory* - The Cultural Landscapes Inventory (CLI) documents the location, historical development, and current management of cultural landscapes. This information is entered in the computerized Cultural Landscapes Automated Inventory Management System (CLAIMS), an analytical tool to assess budgetary, scheduling, and program development needs at all organizational levels. Landscapes included in the CLI are either eligible for the National Register or are to be treated as cultural resources by law, policy, or decisions reached through the park planning process. The cultural landscapes inventory process includes four levels of analysis with each level corresponding to a specific degree of effort and detail in the inventory. Level II, landscape

analysis and evaluation, provides complete baseline information. This data entry is usually completed by the support office, cultural resource center, or under contract. In FY 2000 and FY 2001, approximately $1.0 million per year will be allocated to continue inventory work and document management information concerning significance, threats, impacts, condition, use, and approved treatments.

• *Cultural Landscape Report* - The Cultural Landscape Report documents research concerning condition, causes of deterioration, necessary treatments, and treatment alternatives, as well as the development history or evolution of a landscape. It is the primary guide for park management decisions concerning landscape use and treatment. Cultural landscape reports are usually prepared by support office, cultural resource center, or under contract.

The results of the above applied research efforts contribute to meeting the NPS mission goal Ib -- contributes to knowledge about cultural resources and associated values and management decisions about resources are based on adequate scholarly and scientific information. The annual goal for FY 2001 to increase the number of cultural landscapes on the cultural landscapes inventory contributes to achievement of long-term goal Ib2 in that landscapes are identified so that park managers can consider them in their decision-making.

Performance Goals

Long-term Goal Ib2B	By September 30, 2005, cultural landscapes inventoried and evaluated at Level II are increased by 136.4% (From 1999 baseline of 110 to 260).
Annual Goal Ib2B	By September 30, 2001, cultural landscapes inventoried and evaluated at Level II are increased by 45.5% (From 110 to 160).

Cultural Landscapes Performance Information	FY 1999 Actual	FY 2000 Estimate	FY 2001 Estimate
Number of cultural landscapes inventoried at Level II on the Cultural Landscapes Inventory.	110	135	160

Historic and Prehistoric Structures

Park historic structures include Independence Hall, Fort Sumter, log cabins at Denali National Park and Preserve, the Statue of Liberty, and the sailing ship *Balclutha* at San Francisco Maritime National Historical Park, as well as prehistoric structures such as Balcony House at Mesa Verde National Park. Historic and prehistoric structures and the events surrounding them are key park cultural resources, forming the basis for 225 park units, and are integral to many other parks. The NPS defines a historic or prehistoric structure as "a constructed work…consciously created to serve some human activity." They include buildings, monuments, millraces, canals, ships, railroad locomotives, rolling stock, stockade and fences, defensive works, temple mounds and kivas, outdoor sculpture, and ruins. As of the end of FY 1999, a total of 24,225 structures (in 367 parks) of the estimated 26,000 structures in the 379 parks have been identified.

Mission San Jose. San Antonio Missions National Historical Park

Park Management/Resource Stewardship

Through applied research, information necessary for park management decisions concerning treatment and use of historic and prehistoric structures is obtained and provided to park managers. Research typically concentrates on three broad aspects of a historic structure: the historical, technical, aesthetic, or scientific associations; the developmental history or evolution; and the nature, performance, and capability of its material and systems. This information is collected, analyzed, and organized through a variety of means, discussed below.

• *Historic Resource Study* - The Historic Resource Study documents the thematic context sufficient to evaluate historical, aesthetic, technical, or scientific associations of structures, and contains enough information about the developmental history or evolution of each structure to evaluate its integrity, and enough information about the contributing environment of each structure to enable National Register documentation to be prepared. Historic resource studies are usually prepared by support office or cultural resource center staff, or under contract.

• *List of Classified Structures* - The List of Classified Structures (LCS) documents the location, historical development, and current management of historic and prehistoric structures. The LCS is a computerized inventory that is used as an analytical tool at all organizational levels to assess budgetary, scheduling, and program development needs. Structures included are either eligible for the National Register or are to be treated as cultural resources by law, policy, or decisions reached through the park planning process. The List of Classified Structures provides data to other automated systems such as the facility management system and is usually conducted by the support office or cultural resource center staff.

In FY 2000 and in FY 2001, approximately $250,000 per year will be allocated to update 33.4 percent of the basic management information on the List of Classified Structures concerning significance, threats, impacts, condition, use, and approved treatments and to add approximately 2,000 structures.

• *Historic Structure Report* - The Historic Structure Report documents research concerning condition, causes of deterioration, necessary treatments, and treatment alternatives as well as the developmental history or evolution of a structure. It is the primary guide for park management decisions concerning structure use and treatment. Historic structures reports are usually prepared by support office or cultural resource center staff, or under contract.

The results of the above applied research efforts contribute to meeting the NPS mission goal Ib -- contributes to knowledge about cultural resources and associated values and management decisions about resources are based on adequate scholarly and scientific information. The annual goal for FY 2000, which is to increase the number of eligible historic and prehistoric structures on the List of Classified Structures by 1,000, contributes to meeting long-term goal 1b2 in that structures are identified so that park managers can consider them in their decision-making

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Performance Goals

Long-term Goal Ib2C	By September 30, 2005, 100% of the historic structures on the 1999 List of Classified Structures have updated information (24,225 of 24,225).
Annual Goal Ib2C	By September 30, 2001, 8,092 of the 24,225 historic structures on the 1999 List of Classified Structures have updated information (33.4%).

Historic and Prehistoric Structures Performance Information	FY 1999 Actual	FY 2000 Estimate	FY 2001 Estimate
Percent of historic and prehistoric structures on the 1999 List of Classified Structures with updated information.	NA	16.7%	33.4%
Number of historic and prehistoric structures on the 1999 List of Classified Structures with updated information.	NA	4,046	8,092

Park Management/Resource Stewardship

Olmsted Archives has a multi-year project to catalog, preserve, and provide access to its historic collection. Frederick Law Olmsted National Historic Site

Number of historic and prehistoric structures inventoried on the List of Classified Structures.	24,225	25,000	26,000

Museum Collections

Museum collections from over 320 units of the National Park System are maintained in parks, at six NPS cultural resource centers, and at 142 non-Federal repositories. These collections date, in some instances, to establishment of the park and comprise 30 million archeological, 3.4 million historical, 1.2 million biological, 147,000 paleontological, 55,000 ethnological, and 49,000 geological items, plus an additional 45.4 million archival and manuscript items. The collections include items ranging from historic furnishings in the home of John Adams, to flags that flew over Fort Sumter, to Thomas Edison's handwritten notes on inventions, to the tools and furnishings of a working ranch in Montana, to botanical specimens from Yosemite, and archeological items from Mesa Verde. These museum collections are important not only in their own right, but also because of their direct association with the nationally significant sites in the National Park System.

Under the research function, our goal is to acquire and document collections that support the mission and scope of each park and use those collections to increase public enjoyment and understanding of our heritage, and its associated values. Parks use the documentation associated with collections to make informed decisions about interpreting and managing these and other park resources. For example, the drawings and photographs in the collection at Frederick Law Olmsted National Historic Site have enabled the park manager to make decisions about restoring the park's cultural landscape. The public has access to these collections through exhibits, interpretive programs, publications, the World Wide Web, films and videos. In addition, for research purposes, the public can directly access information in collections catalog and other databases, as well as access the collections themselves. In FY 1999, parks responded to over 42,000 public research requests and park visitors viewed nearly 322,000 objects on exhibit.

The National Park Service *Museum Handbook*, which is continually revised to address changing professional standards and innovations, provides parks with detailed procedural guidance to assist them in the following key park research functions:

• *Acquisition* - Parks acquire collections according to the scope of collection statement, which defines what a park will collect based on the park's mission and legal mandates.

• *Documentation and Cataloging* - Parks research and document collections and catalog them in the Automated National Catalog System (ANCS).

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• *Museum Collections Planning and Management* - Parks write collection management plans to guide management of the collections according to professional standards and to facilitate park goals.

• *Inventory and Accountability* - Parks annually inventory collections in order to maintain accountability.

• *Research, Exhibits, and Accessibility* - Parks research the museum collections and their associated documentation in order to develop interpretive programs, exhibits, publications, and multi-media programs for the public. The public accesses information about the collections through these educational tools or by direct searches of the catalog (ANCS) and examination of individual objects for research. In addition, parks loan collections to other museums for exhibit and research.

Park staff, cultural resource center staff, partners, or contractors provide direct management functions for the collections. Support office and cultural resource center staff provide planning and technical assistance. The national office provides policy and technical guidance and develops Servicewide systems. In FY 1999, the number of archives acquired exceeded the number cataloged, so that the percentage of archives cataloged decreased from FY 1998. However, parks exceeded the targets for numbers of objects and archives cataloged.

In FY 2000, the NPS will emphasize the cataloging of the collections backlog. An increase of $350,000 will allow parks to catalog 1.94 million items, i.e., approximately 750,000 objects and 1.19 million archival records and manuscripts, thus increasing the cataloged inventory by five percent. In addition to being available at the parks, the data will be aggregated and centrally archived at the national catalog. The *Museum Handbook* will be revised to provide updated guidance on museum record keeping and new information on use of collections, including information on exhibits, research, and furnished historic structures.

In FY 2001, goals for the Museum Management Program include cataloging a backlog of 1.94 million additional items. As in FY 2000, the cataloged inventory would increase by five percent. Also, in FY 2001, as in FY 2000, the 291 parks that installed the new software program in FY 1998 would be able to acquire enhancements, obtain needed technical support and customization, and catalog collections. The *Museum Handbook* will be posted on the World Wide Web so that the public may benefit from this valuable museum management guidance.

Through these and other activities, the museum collections program supports the achievement of mission goal Ib -- to contribute to knowledge about resources and associated values and to make management decisions about resources and visitors based on adequate scholarly and scientific information. Cataloging collections and improving access to collections and their associated documentation directly contribute to knowledge of these resources. The performance goal for FY 2001 is associated with long-term goal Ib2, increasing the inventory and evaluation of cultural resources. Specifically, parks propose to catalog 1.94 million items annually, increasing cataloged collections (archives and objects) from a FY 1999 baseline of 37.3 million cataloged items to 41.2 million in FY 2001. Achievement of these goals will have the outcome of making these resources accessible for the public's enjoyment and understanding of our cultural and natural heritage. Based on FY 1999 data, it appears that NPS will exceed this goal in FY 2001.

Performance Goals

Long-term Goal Ib2D	By September 30, 2005, museum objects cataloged are increased by 31.1% [from 37.3 million to 48.9 million]
Annual Goal Ib2D	By September 30, 2001, increase the total number of museum objects cataloged by another 1.94 million.

Museum Collections Performance Information	FY 1999 Actual	FY 2000 Estimate	FY 2001 Estimate

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Percent of objects cataloged	61%	63%	65%
Percent of archives cataloged	35%	38%	40%
Number of backlogged objects cataloged	1,075,094	750,000	750,000
Number of backlogged archives cataloged	2,948,308	1,190,000	1,190,000

Museum Collections Workload Factors	FY 1999 Actual	FY 2000 Estimate	FY 2001 Estimate
Number of items on exhibit	321,800	321,800	321,800
Number of public research requests	42,600	42,600	42,600
Number of NPS research requests	18,200	18,200	18,200

Servicewide Project Funding

The Cultural Resources Preservation Program (CRPP) provides funds for archeological, ethnographic, and historical research; the preparation of management studies, object cataloging, historic structure reports and cultural landscape reports; and other research, planning, and data collection activities. The CRPP, funded at $13.9 million in FY 2000, which includes a $500,000 increase, provides funding for both the research projects described in this section and the resource management projects described in the Cultural Resources Management section that follows.

In FY 2000, funds are again being targeted for three initiatives to improve the availability of basic cultural resources information for resource management planning and interpretive purposes. These initiatives and the increased performance due to the $500,000 increase are discussed above and include $2.4 million for the systemwide archeological inventory, evaluation, and documentation program; $892,000 for historic resource studies; and $1.1 million for the inventory and documentation of historic and prehistoric structures and cultural landscapes.

Examples of FY 2000 projects include a cultural landscape report at Point Reyes National Seashore; archeological site investigations at the northwest Alaska areas; a collection management plan for George Washington Carver National Monument; a historic resource study for Civilian Conservation Corps era resources at Haleakala National Park; a historic structure report for the Vanderbilt Mansion; and an administrative history of Lake Mead National Recreation Area.

In FY 2001, Cane River Creole National Historical Park will prepare a historic structure report for the slave cabins at Magnolia Plantation; Cumberland Island National Seashore will prepare a maintenance guide for 15 historic structures; New Bedford Whaling National Historical Park will prepare a National Register nomination; Ozark National Scenic Riverways will prepare a cultural landscape report for the Nichols complex; San Antonio Missions National Historical Park will catalog the backlog of museum objects and archives; and Sitka National Historical

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Park will enhance historic photographic images to develop detailed illustrations of original totem poles so that accurate reproductions can be made.

Applied research funds are also used for salary and support costs for specialists in Washington, D.C., and support offices for overall program development, coordination, and direction of the cultural resources research activities of the NPS. Applied research funds for support offices are used for cultural resource specialists to provide program coordination and support. Limited funding and staff for cultural resources management at the park level make this arrangement the most efficient way to meet cultural resource management objectives in parks. Cultural resource specialists in the support offices and the Harpers Ferry Center carry a share of the research load for parks that lack the necessary personnel or funding. Contract work frequently augments NPS staff or is used to acquire specialized expertise. These funds also cover a portion of the cost of the cultural resource centers in certain NPS Regions. The centers, also staffed by cultural resource specialists, support the cultural resources management objectives of the NPS through a program of public education and outreach, research, technical assistance, and centralized management of museum objects.

FY 2001 BUDGET REQUEST

	2001 Budget Request	Program Changes (+/-)
▪ Cultural Resources Applied Research $(000)	18,495	+1,000

The FY 2001 request for Cultural Resources Applied Research is $18.495 million, which represents an increase of $1.506 million over the FY 2000 enacted level. The FY 2001 proposed programmatic increase of $1.0 million to Cultural Resources Applied Research activities includes:

	$(000)
▪ Museum Management Program - Protect Collections	500
▪ Museum Management Program - Cataloging	500
Total	1,000

Justifications for these increases are included at the end of this subactivity's presentation.

E. Cultural Resources Management
FY 2000 Estimated Program and Anticipated Accomplishments

Enacted: $76,681,000

Cultural Resources Management is the preservation, maintenance, and protection of cultural resources to ensure that these resources receive the care necessary to perpetuate their existence. Although this work is done at the park level, it is supplemented by Region and Servicewide funding, especially for major preservation work. Lack of maintenance leads to accelerated deterioration, increased costs for repair, or the eventual loss of the cultural resource.

Ongoing assessments of park cultural resources have found that archeological sites, historic and prehistoric structures, cultural landscapes, and museum collections are at risk because of various activities within and beyond

park boundaries. These assessments have identified vandalism, lack of adequate storage and care of park museum collections, weather, and air pollution as problems. The assessments also indicate that resources can be impacted through inadequate attention to stabilization, maintenance, and repair of structures and landscapes, or failure to monitor changes in the resource and to correct improper uses.

Several requirements must be met to ensure adequate resource preservation: (1) Routine and cyclic preservation maintenance activities must be completed when needed. (2) The condition of the resources must be inspected and monitored to obtain warnings of potential threats, to determine preservation requirements, or to take corrective action. (3) Preservation projects must be completed so that routine or cyclical preservation maintenance will perpetuate the cultural resource. This includes correcting museum storage facility deficiencies and stabilizing threatened structures, landscapes and sites. (4) Professional standards and guidelines for operational or project work must be developed to conserve basic resources.

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Archeological Resources

Pueblo Bonito, Chaco Culture National Historical Park (NPS photo)

Archeological resources are susceptible to deterioration from natural forces of weather and erosion, looting or vandalism, and impact from park operations and visitors. Regular monitoring and maintenance is an important part of effective management. The 1997 baseline data on site condition was available for approximately 30 percent of the archeological sites reported electronically; only 40 percent of the known archeological sites had electronic records. In FY 1997, approximately 45 percent of the sites with condition information were in good condition. At the beginning of FY 2000, information on site condition was available for 14,940 of the sites recorded in the Archeological Sites Management Information System. Of these, 5,623 were recorded in good condition. In that period, some sites -- initially recorded as being in good condition --have been reassessed. Almost 1,000 sites with out-of-date data in the condition field have been reviewed and the condition information has been deleted until field inspections can be conducted. The focus in FY 2000 is to continue to assess and enter data on site condition from backlog and new site records.

The numbers for the performance goals below represent information received as of December 1, 1999, from a Servicewide call for data. The estimates are based on current levels of funding and support. Reports by NPS park units and requests for funding increases, provided elsewhere, will affect the estimates.

Performance Goals

Long-term Goal Ia8	By September 30, 2005, 50% of the recorded archeological sites with condition information are in good condition. [From FY 1999 baseline of 5,623 sites in good condition to 7,470 sites in good condition based on FY 1999 baseline of 14,940 sites with condition information]
Annual Goal Ia8	By September 30, 2001, 42% of the recorded archeological sites with condition information in the Archeological Sites Management Information System are in good condition. [From FY 1999 baseline of 5,623 in good condition to 6,275 sites in good condition based on FY 1999 baseline of 14,940 sites with condition information]

Archeological Resources Performance Information	FY 1999 Actual	FY 2000 Estimate	FY 2001 Estimate
Number of sites in good condition, reported electronically	5,623	5,976	6,275
Percent of archeological sites with condition information in the Archeological Sites Management Information System in good condition.	38%	40%	42%

Professional guidance in planning and implementing resource studies is equally important. To assist parks in protecting sites, information about archeological resources in parks is shared with professionals and the general public to increase knowledge about their significance. Active interpretation and outreach programs and increased public access to information foster greater appreciation of the need to protect and preserve archeological resources. These professional and popular public outreach materials assist in helping park visitors understand and appreciate the archeological resources in parks and on other public lands. The National Archeological Database (NADB)-Reports portion that contains entries for the National Park Service archeological reports was not updated in FY

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1999. A major goal for FY 2000 is to update NADB-Reports and develop an online data entry capability. Information on archeological research in the national park units is also accessible through the program's website <www.cr.nps.gov/aad>. Because partnership and park activities are combined, the workload statistics for professional and public daily access appear in the National Recreation and Preservation portion of the budget under Archeological Assistance.

Other programs in the National Park Service, i.e., ranger activities and library services, also report on these workload factors. The Archeology and Ethnography program uses these data in a variety of initiatives to improve resource protection and information exchange Servicewide and governmentwide.

Archeological Resources Workload Factors	FY 1999 Actual	FY 2000 Estimate	FY 2001 Estimate
Number of incidents of archeological looting and vandalism in parks [Source: NPS ARPA report.]	297	400	500
Number of NPS archeological reports available online through NADB-Reports	6,270	6,400	7,000

Ethnographic Resources

Applied ethnographic research helps managers and planners to work cooperatively and effectively with cultural groups that have longstanding, traditional associations to resources in existing or proposed parks. Ethnographic or cultural anthropology studies document present-day ways of life, including values, beliefs and practices, and the cultural and natural resources and places people deem important in their religion and economy, ethnic history and sense of family and community. Studies have been conducted with American Indians, Alaskan Natives and other Native Americans, African Americans, Appalachian people and more. Several types of routine studies are undertaken Servicewide, including the Ethnographic Overview and Assessment, which reviews available data on specific groups and parks, initiates consultation with involved groups, and develops baseline information on resources and their traditional uses. Other studies focus on traditional resource uses in Alaska and elsewhere, and on the concerns of communities and other stakeholders affected by park planning.

Slave cabin, Magnolia Plantation, 1840s, Cane River Creole National Historical Park (NPS photo)

Ethnographic studies provide:

- professionally sound strategies, recommendations, and alternatives for consulting and working collaboratively with park-associated groups;
- data required for informed decisions about park planning and the culturally appropriate use, protection, treatment and interpretation of resources;
- information on tribal or community ways of life that each studied group can add to their own library.

Ethnographers also undertake special projects, consultation, and provide technical assistance to both parks and park-associated communities to help achieve mutually agreeable solutions to the treatment and use of ethnographically meaningful resources. Professional expertise is also provided to the Department and interagency work groups to enhance consideration of Native American, African American, Hispanic, and other local groups in policy and program development. These professional and popular outreach efforts also assist in promoting public understanding of ethnographic resources and the communities that have long valued them.

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Special ethnography projects include the design and conduct of training programs. These provide park managers and tribal and community representatives with essential information about ethnographic resources while also creating opportunities to stimulate trainee involvement in research and consultation activities that support the inventory process.

All of these activities enhance resource treatment and management by increasing Servicewide, professional, and community awareness of cultural and natural resources that are significant to peoples who have a long-term, traditional interest in park resources.

Ethnographic Resources Workload Factors	FY 1999 Actual	FY 2000 Estimate	FY 2001 Estimate
Number of training and other special projects undertaken by the National Center that affect parks, heritage areas, or ecosystems managed	4	4	4
Number of planning, policy, or guidance documents reviewed for incorporating ethnographic materials issues	35	10	10
Number of Interior, NPS, and interagency workgroups advised	6	6	6

Cultural Landscapes and Historic and Prehistoric Structures

The preservation and maintenance of approximately 26,000 historic and prehistoric structures and an unknown number of cultural landscapes is performed by park personnel or contractors with technical training and experience in the special skills necessary to inspect, monitor, maintain, and preserve these resources in accordance with written procedures developed by resource specialists. Complex preservation work is conducted under supervision of professional staff from parks, support offices or resource center staff or under contract.

Facility Management System. Planning for maintenance requires detailed information about the nature and condition of the resources' respective features. Such information is obtained by systematic inspections and recording in the Facility Management System by park staff.

Work includes general tasks such as scheduled inspections, condition assessments, monitoring, rejuvenative pruning, stabilizing prehistoric ruins, arboricultural services, repainting weathered historic buildings, vista management, replacing roofs, replacement of missing or deteriorated plant material, and monitoring structural movement.

The results of these resource management efforts contribute to meeting NPS mission goal Ia -- cultural resources and associated values are protected, restored and maintained in good condition and managed within their cultural context. The annual goals for FY 2000 and FY 2001 for historic and prehistoric structures and cultural landscapes are to increase the percentage of structures in good condition, contributing to the achievement of long-term goal Ia5: Historic Structures, and the percentage of cultural landscapes in good condition, contributing to the achievement of long-term goal Ia7: Cultural Landscapes.

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Performance Goals

Long-term Goal Ia5	By September 30, 2005, 50% of the historic structures on the 1999 List of Classified Structures are in good condition (12,113 of 24,225).
Annual Goal Ia5	By September 30, 2001, 11,144 of the 24,225 historic structures on the 1999 List of Classified Structures are in good condition).
Long-term Goal Ia7	By September 30, 2005, 33% of the cultural landscapes on the 1999 Cultural Landscapes Inventory with condition assessments are in good condition (119 of 359).
Annual Goal Ia7	By September 30, 2001, 103 of the 359 cultural landscapes on the 1999 Cultural Landscapes Inventory with condition assessments are in good condition (28.7%).

Historic and Prehistoric Structures and Cultural Landscapes Performance Information	FY 1999 Actual	FY 2000 Estimate	FY 2001 Estimate
Percent of historic and prehistoric structures on the 1999 List of Classified Structures in good condition.	44%	45%	46%
Number of historic and prehistoric structures on the 1999 List of Classified Structures in good condition.	10,659	10,902	11,144
Percent of cultural landscapes on the 1999 Cultural Landscapes Inventory with condition assessments in good condition.	26.7%	27.6%	28.7%
Number of cultural landscapes on the 1999 Cultural Landscapes Inventory with condition assessments in good condition.	96	99	103

Museum Collections

Museum collections from over 320 units of the National Park System are maintained in parks, at six NPS cultural resource centers, and 142 non-Federal repositories. The collections include 33.5 million archeological, ethnographic and historical objects, 1.4 million biological, geological, and paleontological specimens, and 45.4 million archival and manuscript items. Some are individually significant, such as George Washington's campaign tent at Colonial National Historical Park. Others are recognized as part of a systematic scientific collection, such as the archeological collections from Chaco Culture National Historical Park. Others are important for their contribution to the interpretation of a site, such as the eyeshade in the office at Carl Sandburg National Historic Site.

Under the resource management function, the goal is to preserve and protect park collections so that the collections are accessible to current and future generations for enjoyment and appreciation. Parks monitor and control collection storage and exhibit environments, provide security and fire protection to minimize the risk of damage and loss, assess the condition of individual objects, and provide cleaning, stabilization and other treatments to park collections.

The National Park Service provides technical guidance to parks on preservation and protection of collections in the *Museum Handbook* and *Conserve O Gram*, which are also available to the general public and are popular resources in the Nation's museum community at large. These publications, which are continually revised to address changing professional standards and innovations, provide parks with detailed procedural guidance to assist them in the following key park resource management functions:

• *Adherence to Professional Standards* - Using the standardized Checklist for Preservation and Protection of Museum Collections, parks assess the status of museum storage and exhibits relative to professional standards for environment, security, fire protection, housekeeping and planning. Parks take corrective actions as needed.

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Corrective actions that cannot be accommodated in current budgets are programmed for future funding. Twenty-six parks and two centers need construction program funds in order to address their deficiencies.

• *Monitoring* - Parks monitor the museum environment for light, temperature, relative humidity, air quality, and pests. In addition, parks routinely inspect their security and fire protection systems.

• *Housekeeping* - Parks perform regular housekeeping and cyclic maintenance tasks to keep the storage and exhibit environments as well as the objects in good condition.

• *Museum Collections Management Planning* - Parks complete and implement management plans to preserve and protect the collections, e.g., collection storage plan, emergency operations plan, integrated pest management plan.

• *Survey and Treatment* - Parks survey the condition of individual items and provide treatment for stabilization, thus allowing them to be safely accessed for research and exhibit. Parks give priority to treating objects for exhibits and may acquire reproductions for interpretive or exhibit programs if the original object is too fragile.

Park staff, cultural resource center staff, partners, or contractors provide direct management functions for the museum collections. Support office and cultural resource center staff provide planning and technical assistance. The national office provides policy and technical guidance and develops Servicewide systems.

In FY 1999, parks made many improvements to the preservation, protection and accessibility of museum collections. San Francisco Maritime National Historical Park obtained 43,251 square feet of museum storage space at the former Alameda Naval Air Station to house 81 boats, marine engines, and other large objects.

Large object storage at Alameda Point, San Francisco Maritime National Historical Park (photo by Tim Campbell, NPS)

In FY 2000, the NPS will emphasize the correction of deficiencies identified on the Checklist for Preservation and Protection of Museum Collections. With available funding, including the increase of $350,000, parks will correct over 1,900 deficiencies, focusing on fire safety procedural deficiencies that can be corrected at minimal expense. New technical preservation guidance will be issued in *Conserve O Gram* and the NPS *Museum Handbook* and a Servicewide object/archive condition assessment strategy will be tested to quantify object conditions and treatment needs and establish a process for prioritizing treatments.

Through these and other activities, the museum collections program supports the achievement of mission goal Ia -- to protect, restore and maintain resources in good condition. The performance goal for FY 2000 and FY 2001 is associated with long-term goal Ia6 to ensure that the preservation and protection conditions where park museum collections are stored and exhibited meet professional standards. Using the standards contained in the NPS Checklist for Preservation and Protection of Museum Collections, the NPS proposes to increase the number of standards met from 63.4 percent in FY 1999 to 67.2 percent in FY 2001. As in FY 2000, additional emphasis will be placed on procedural deficiencies that can be corrected at minimal cost. Achievement of these goals will have the outcome of improving preservation of park museum collections, and the natural and cultural heritage they represent.

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Performance Goals

Long-term Goal Ia6	By September 30, 2005, 71.6% of preservation and protection standards for park museum collections are met.
Annual Goal Ia6	By September 30, 2001, increase the standards met to 67.2%.

Museum Collections Performance Information	FY 1999 Actual	FY 2000 Estimate	FY 2001 Estimate
Percent of conditions in park museum collections meeting professional standards	63.4 %	65.7%	67.2%
Number of preservation/protection deficiencies corrected	2,107	1,927	1,179

Interior Museum Property Program

The Interior Museum Property Program, in partnership with the National Park Service and other bureaus, develops and coordinates departmentwide museum policy and strategies. The program provides departmentwide training and technical assistance to bureaus and offices and maintains departmentwide data from bureau reports. It also monitors bureau progress in implementing museum property management plans more than 110 million museum property artifacts, specimens, and documents in the Department of the Interior's bureaus and offices.

In FY 2000, the Interior Museum Program is continuing to monitor work toward the performance measures identified in the Department's Strategic Plan, oversee the implementation of bureau plans for managing museum property, and provide departmentwide technical assistance and training to bureau curatorial staff. It will complete planning for the third national conference on "Partnership Opportunities for Federally-Associated Museum Collections" to be held November 13-15, 2000, providing a forum for sharing solutions to the challenges associated with managing our collections. This program is funded at $253,000 in FY 2000.

In FY 2001, the Department will further strengthen training programs and materials for bureau curatorial staff and increase services to the growing number of customers who access collections through exhibits and for research and resource management. The DOI Museum Services Branch will continue to work with the bureaus to provide technical assistance in addressing backlogs in basic inventory of collections, correcting environmental and security deficiencies, and increasing access to and use of museum collections. This assistance applies to collections held in Interior facilities and in the facilities of non-Federal institutions with which Interior bureaus partner to manage collections.

The overall outcome of these activities will be increased public access to Department of the Interior museum collections through increased availability of these collections for use in resource management, research, and public interpretation programs throughout the Department and in the more than 400 non-Federal institutions that partner with Interior bureaus in managing these collections.

DOI Performance Goals – Interior Museum Property Program

Long-term Goal	By September 30, 2005, annually increase by 5% the number of museum objects available for research or public interpretation by improving our basic accountability for these resources, as measured against a baseline established in FY 1998 [36,376,000].

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Interior Museum Property Program Workload Factors	FY 1999 Actual	FY 2000 Estimate	FY 2001 Estimate
Attendance at locations exhibiting cultural and museum objects [baseline 15,207,000]	15,895,000	15,895,000	16,119,000 (baseline+6%)
Number of museum objects accurately cataloged [baseline 36,376,000]	41,549,000	43,627,000	45,704,000
Percentage of sites accessible via the Internet that meet standards [baseline 329 of 727 sites or 45%]	46%	47% (baseline+4%)	48% (baseline+6%)

Native American Graves Protection and Repatriation Act (NAGPRA)

The program contributes to the compliance of the NPS with the Native American Graves Protection and Repatriation Act. The goals are: (1) to provide appropriate public notices, in the Federal Register or local newspapers, of intents to repatriate Native American human remains or cultural items to appropriate lineal descendents, Indian Tribes, or Native Hawaiian organizations, (2) to help parks establish and maintain effective, continuing consultative relationships with affected American Indian Tribes, Alaska Natives, and Native Hawaiian organizations, (3) to ensure that the requirements of the act are fully and promptly addressed, and (4) to work collaboratively with affected groups to ensure that repatriation requests are addressed and Native American graves on parklands are protected or preserved in culturally appropriate ways. The program supports professional cultural affiliation studies conducted by field units; provides training and assistance to park staff in developing and maintaining consulting and collaborative relationships; develops professionally sound information needed to address legislative and policy requirements; and provides professional services in conducting consultations or providing assistance to affected groups. The FY 2000 budget of $886,000 provides base funding for Servicewide program coordination and funds activities at the national, regional, and park levels to achieve program goals. A goal for this program in FY 2000 is to provide clear advice and recommendations to NPS managers regarding cultural affiliation, appropriate documentation and study, and repatriation.

Native American Graves Protection Act Workload Factors	FY 1999 Actual	FY 2000 Estimate	FY 2001 Estimate
Number of notices of intent to repatriate and inventory completion reviewed and published	5	10	15

Vanishing Treasures

This program was established in FY 1998 to provide funds to reduce threats to ancient prehistoric and historic sites and structures in 41 parks of the Intermountain Region. The goal is to overcome backlogged preservation work by bringing the sites and structures to a condition in which they will be preserved by routine maintenance activities. The intent also is to increase NPS expertise and capability for maintaining these sites and structures. The cadre of skilled maintenance experts is aging and their numbers declining. There is insufficient growth to assure a steady stream of entry-level replacements. In 1997, the number of maintenance experts was estimated at 10 full-time and 25 seasonal or part-time workers, and it was estimated that this workforce needed to be increased by approximately 150 full-time individuals.

The program includes implementation of immediate preservation treatment actions and documentation, planning and management of projects, and development and training of a skilled workforce. Parks, centers, or support

offices, depending upon the nature of each project will have oversight. Project funds are managed at the Regional Office level. Funds sufficient to rebuild the skilled workforce and other expertise are provided at the park base level.

In FY 1999 and FY 2000, the program received increases of approximately $1.0 million each year. Roughly half of the funds made available have been included in various park bases for hiring a skilled workforce. Remaining funds were distributed to parks to complete priority projects. The goals for FY 2000 and FY 2001 will be to continue addressing high priority preservation treatment projects, implement program management, and continue recruiting and training a permanent skilled workforce.

Preservation Treatment Needs. In FY 1999, a total of $633,000 was used to implement fifteen emergency and high priority, small and large-scale preservation treatment projects. In FY 2000, the NPS will apply $815,000 to address eleven projects.

Project Management. In FY 1999, a total of $39,000 was used to support a new park-based project manager, as well as the continuing activities of program management. In FY 2000, the Service will provide $56,000 to continue this support.

Developing and Training Skilled Preservation Experts at Parks. In FY 1999, a total of $862,000 was transferred to the base budgets of ten parks to hire ten individuals. In FY 2000, an increase of $795,000 was provided to hire thirteen specialists in ten parks, including five that did not benefit in FY 1999. Some of these specialists that have been hired include archeologists, structural/civil engineers, historical architects, architectural conservators, and skilled craftspeople, including stonemasons.

Vanishing Treasures Workload Factors	FY 1999 Actual	FY 2000 Estimate	FY 2001 Estimate
Number of projects resulting in improved site conditions	15	11	10
Number of maintenance experts trained	3	3	2
Number of discipline experts trained in Vanishing Treasures conservation	7	10	1
Vanishing Treasures records of individual sites increased	100	100	100

National Underground Railroad Network to Freedom

The National Underground Railroad Network to Freedom Act (Public Law 105-203) authorizes the National Park Service to coordinate and facilitate activities that commemorate and interpret the Underground Railroad. The Service is required to assist in the creation and maintenance of a national network of interpretive sites by linking existing sites, documenting potential sites, and providing educational and technical support for organizations engaged in related activities. Related organizations can and will include community organizations, educational institutions, museums, historical societies, and other public and private agencies.

To accomplish the goals of the act, the National Park Service will continue its efforts to identify and document sites in cooperation with State Historic Preservation Offices, community groups and organizations, and other researchers. As sites are identified and documented, properties associated with the Underground Railroad will be nominated to the National Register of Historic Places, as appropriate, and added to the World Wide Web site, *Aboard the Underground Railroad: A National Register Travel Itinerary*. It is probable that this official list of historic sites will grow to a collection of more than 100 sites over the next few years. The National Park Service

will also create an official symbol to identify elements of the Network to Freedom. Additionally, educational materials, such as those based on the *Teaching with Historic Places* program, including lesson plans and a curriculum guide, will be developed. These materials will be useful for a wide range of educational programs as well as interesting to the general public. Building on the success of current electronic information outreach programs, the National Park Service plans to develop a website that provides original documents and information related to sites, participants and events of the Underground Railroad. Census records, tax forms, emancipation papers, newspaper articles and family letters can be digitized for display and use on this site. These documents will not only provide primary sources for researchers, but will offer examples of how researchers can use public records and archives to craft their own stories.

In FY 1999, the Service established Underground Railroad Network coordinators in each Region. The regional coordinators met three times to plan and develop the new program. A meeting with key partners was held to discuss formulation of the Underground Railroad Network as called for in the legislation. At least five public workshops were sponsored and regional coordinators made presentations at a minimum of 30 conferences sponsored by other organizations. At least six training sessions or presentations for NPS staff were held. Multiple property surveys in several States were initiated or continued, with at least three National Register multiple property nominations underway and more than a half dozen National Register/National Historic Landmark nominations in process. Numerous exhibits, special events, brochures, and a *Teaching with Historic Places* lesson plan were completed or are underway. Technical assistance was offered in response to hundreds of inquiries and at least 26 site visits, each encompassing several sites, were made to provide assistance. Planning is underway for an interdisciplinary charrette to further public understanding of the historic Underground Railroad and aid efforts to research and document, to National Register standards, sites associated with the Underground Railroad.

In FY 2000, the goals of the program will focus on implementing the Underground Railroad Network and developing the logo as specified in legislation. Additionally, the program will focus on facilitating local efforts to document Underground Railroad properties and add them to the National Register of Historic Places. The *National Register Itinerary* website will be expanded and a more comprehensive Underground Railroad Internet site will be developed. The NPS will continue to sponsor public workshops, give presentations at other relevant conferences, and provide technical assistance to participating organizations and individuals. Funding provided in FY 2000 will be used to support regional coordinators who can assist parks and local or State efforts to identify and document sites and nominate them to the National Register. This will aid in conserving sites that meet current standards and help to establish standards for the Underground Railroad symbol or device.

In FY 2001, the NPS anticipates the addition of documents to the web page, additional educational materials, full development of cooperative agreements, and identification of all participants in the Underground Railroad Network. By FY 2002, the National Park Service anticipates an increase of 15 percent in the number of historic sites associated with the Underground Railroad listed in the National Register of Historic Places.

Resource Management Planning

The Resource Management Plan is the blueprint for comprehensive management of park resources. It defines park objectives concerning both natural and cultural resources, documents the status of the resources, and outlines a plan of action to ensure their well-being. Using the plan, park managers can integrate cultural resource considerations into day-to-day programs and longer-term planning. The Service has automated this process to capture some of the data in a Servicewide database. More than 70 percent of the parks that are required to prepare plans have done so and regularly update the information in them. One requirement for projects to be funded is that the project is listed in an approved Resource Management Plan.

Cyclic Maintenance for Historic Properties Program

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The objective of this program is to provide the means whereby parks can do maintenance activities that are required on a fixed periodic basis for all tangible cultural resources. Such work is predictable and occurs in cycles longer than once in two years, e.g., repointing masonry walls of historic and prehistoric structures, pruning historic plant material, stabilizing eroding archeological sites, and preventive conservation of museum objects. This program is funded at $10.4 million in FY 2000.

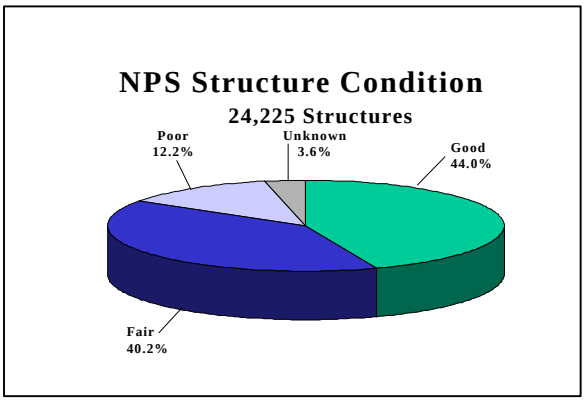
Examples of projects include cleaning brigade markers at Gettysburg National Military Park; reroofing the Howser House at Kings Mountain National Military Park; conserving decorated tin lighting fixtures in the Frijoles Historic District buildings at Bandelier National Monument; stuccoing the historic city walls at San Juan National Historic Site; painting the exterior of the carriage house at James A. Garfield National Historic Site; and conserving wagons and associated tack at Santa Monica Mountains National Recreation Area.

Since FY 1997, and continuing in FY 2001, the NPS will receive supplemental funding derived from fee revenue as a result of the Recreation Fee Demonstration Program. It is anticipated that additional cultural cyclic projects will be accomplished using this funding.

Cultural Resources Preservation Program

This national program provides funds for the following general categories of project work: control of the environment, security and other conditions affecting museum objects; and urgent stabilization and preservation work on archeological and historic sites, historic and prehistoric structures, cultural landscapes, and museum objects.
In FY 1998, the NPS received a $2.0 million increase in the Cultural Resources Preservation Program that will address in current dollars 7 percent of the unfunded stabilization needs of the most important historic and prehistoric structures by type and historical significance over the next 10 years. This allows 100 structures in 50 parks per year to be stabilized and their condition changed from poor or fair to good condition. Stabilization is defined as "a treatment action to render an unsafe, damaged, or deteriorated historic or prehistoric structure stable, allowing routine and cyclic maintenance to preserve it."

As of the end of FY 1999, 44 percent of the inventoried historic and prehistoric structures are in good condition, but 56 percent are in poor, fair, or unknown condition, as shown in the accompanying "Condition" chart. Good condition is defined as: "The structure and significant features are intact, structurally sound, and performing their intended purpose. The structure and significant features need no repair, but only routine or cyclic maintenance." The number, condition, cost for stabilization, and the backlog of historic and prehistoric structure needs are influenced by factors such as the addition of new structures in need of treatment, cost escalation, and the loss of resources due to inattention.



Examples of structures to be stabilized in FY 2000 include the Kennecott Machine Shop and Railroad Depot at Denali National Park; the Mary Locher Cabin at Antietam National Battlefield; the Shalda Log Cabin at Sleeping Bear Dunes National Seashore; and the Kaloko Fishpond Wall at Kaloko-Honokohau National Historical Park. Projects to be funded by this increase do not include those funded through the Vanishing Treasures Initiative.

In FY 1999, parks made many improvements to preserve and protect museum collections. Kalaupapa National Historical Park stabilized and adapted the historic jail to provide storage space that meets environmental control, security, and fire protection and suppression requirements for museum collections; Alaska Region continued a

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multi-year project to conserve organic specimens and objects in park museum collections. In FY 2000, Adams National Historical Park will conserve historic books collected by four generations of the Adams family; and Cumberland Island National Seashore will complete a multi-year project to relocate and improve the museum collections storage facility. Proposed FY 2001 projects include using window fans to improve the climate control in the historic house at Carl Sandburg Home National Historic Site; and initiating preservation treatment for 5,000 rare books, journals, diaries and manuscripts (originals dating to 1860s) at Yellowstone National Park.

Freemont Culture petroglyph, Capitol Reef National Park (NPS photo)

Projects to improve and maintain sites in good condition include: (1) the use of new technologies for onsite assessments and treatments, (2) documentation, (3) the development and implementation of long-term monitoring programs, and (4) stabilization and other conservation techniques. Project proposals for FY 2001 target a number of preservation concerns. For example, stabilization of sites along new visitor trails is proposed for Minute Man National Historical Park to overcome deterioration over time, to use new materials and methods, and to provide up-to-date interpretation. Mesa Verde National Park, as part of its rehabilitation of Far View Community, is planning to also reduce wildfire fuel (vegetation) around the area to reduce the threat of fire, reduce exotic vegetation, replant deflated areas, and reroute visitors. Joshua Tree National Park is planning to conduct emergency excavations on sites with heavy visitor impact. The sites will be tested over three years and the resulting information will be used for interpretation and protection planning. A number of parks, such as Hopewell Furnace National Historic Site, are employing geographic information systems to help better locate sites for planning purposes. Global positioning system and magnetometer studies that have pinpointed underwater anomalies at Canaveral National Seashore will be tested to determine the nature of the objects located. A number of studies involve coordination with tribes to record decaying pictographs and petroglyphs, for example those in the Cook Inlet region in Lake Clark National Park and Preserve. Some affiliated tribes do not want extraordinary preservation treatments undertaken at this time, and archeologists are studying the effects of environmental impacts -- especially fire at the Battleship Rock Petroglyph in Mesa Verde -- and visitor impact over time to document loss.

Beginning in FY 1997 and continuing in FY 2001, the NPS received supplemental funding from fee revenue as a result of the Recreation Fee Demonstration Program. It is anticipated that additional cultural resources preservation projects will be accomplished using this funding.

Support Offices and Cultural Resource Centers

Specialists (applied ethnographers, curators, archivists, conservators, archeologists, historians, historical architects and historical landscape architects) at the support offices, cultural resource centers, and the Harpers Ferry Center carry a share of the preservation maintenance workload for parks that lack the necessary personnel or funding. Contract work frequently augments system office staff or is used to acquire specialized expertise. Regional funds also cover a portion of the cost of the cultural resource centers in certain Regions. The centers provide services to the parks in the form of research, project supervision, technical assistance, management planning, and centralized management of museum objects. The NPS maintains the following cultural resource centers:

Alaska Regional Curatorial Center
Midwest Archeological Center
Museum Resource Center
Northeast Cultural Resources Center
Olmsted Center for Landscape Preservation

Southeast Archeological Center
Western Archeological and Conservation Center

FY 2001 BUDGET REQUEST

	2001 Budget Request	Program Changes (+/-)
▪ Cultural Resources Management $(000)	76,491	+3,779

The FY 2001 request for Cultural Resources Management $76.491 million, which represents an increase of $5.008 million over the FY 2000 enacted level. The FY 2001 proposed programmatic increase of $3.779 million to Cultural Resources Management activities includes:

	$(000)
▪ Park Base Operations Increase	2,304
▪ Regional Office Park Support	165
▪ Vanishing Treasures	310
▪ Treasures of the Nation Digitization	1,000
Total	3,779

Justifications for these increases are included at the end of this subactivity's presentation.

F. Resources Protection
FY 2000 Estimated Program and Anticipated Accomplishments

Enacted: $41,509,000

Natural and cultural resources are continually threatened by human impacts and uses and by such illegal activities as poaching which causes harm and, in some cases, destruction of the resources for which national parks were established.

Natural resources protection is one of the many responsibilities of park law enforcement personnel as well as all Park Service employees, and is achieved through the management of legal consumptive uses, prevention of illegal consumptive activities, phaseout of unauthorized uses, approved provision for nonrecreational special park uses, and resolution of boundary issues. The protection of resources is accomplished through a program of patrols, investigations, remote surveillance, education of employees and the public, improved security, and increased interagency cooperation. Preventive measures focus on educating offenders as to the effect of inappropriate or illegal behavior on irreplaceable resources. Similarly, educating Park Service employees and visitors about the impact of their work habits and behavior on the quality of resources is an effective long run preventive measure as well as recognizing illegal activities.

The poaching of wildlife from national parks has been steadily increasing each year for the past several years. An assessment conducted by the NPS indicated that poaching involves the illegal removal of 105 species of wildlife

from approximately 153 park areas around the country. A recently completed two year investigation yielded in excess of 250 prosecutable cases on various wildlife and plant crimes, it also produced a large volume of data that indicates there is a significant trade and illegal market in wildlife and plant parts from National Park areas. The data suggests that there is a significant domestic as well as an international market for these illegally taken plant and animal parts.

The illegal removal of wildlife from the parks is suspected to be a factor in the decline of at least twenty-nine species of wildlife, and may lead to the extirpation of nineteen species from the parks. In addition, several species of wildlife Federally listed as threatened or endangered are being killed within units protected by the National Park Service.

Five of the species that are Federally listed as endangered are being poached in fifteen different parks. These species are the bald eagle, peregrine falcon, hawksbill sea turtle, California brown pelican, and the Schaus swallowtail butterfly. Seven species of wildlife listed as threatened are also suffering from poaching activities. These are the Steller sea lion, grizzly bear, spotted owl, greenback cutthroat trout, green sea turtle, loggerhead sea turtle, and the desert tortoise.

Wildlife are poached for different reasons, often for food or for the sale of body parts to a local or international commercial market. For example, bear gall bladders and bear paws are often taken for the oriental wildlife parts trade for medicinal purposes. Elk antlers, especially those taken from national parks where the forage has no chemicals, are also traded on the Asian market. Other wildlife parts serving the illegal trade in local and world markets include yellow-crowned night-herons (food), raptors (falconry), snakes (fashion and pets), and paddlefish (caviar).

Annual law enforcement statistical report. The National Park Service uses as its baseline document an annual report on law enforcement activities within the parks to include resources crimes. For some years it has been known that resource crimes constitute the largest single category of crimes in the parks. Examples include poaching of plants and animals, timber cutting and theft, Archeological Resources Protection Act (ARPA) crimes, driving off road and encroachment on to NPS lands. As the Service continues to improve its information gathering ability it may discover resource crimes are a bigger threat than we now envision.

Environmental crimes. The natural environment within and immediately adjacent to our national park areas is the subject of growing concern from past and present environmental crimes and clean water issues. The Service has been the victim of toxic dumping activities in the past and this practice continues today. With the increase of population in this country urban sprawl threatens to increase these types of offenses. No longer will we face just the dumping of residential trash but we are now experiencing industrial dumping of solvents, asbestos and other toxic materials in remote areas around and within the parks. The Service has a responsibility to be proactive in the environmental crimes arena. Through the recent establishment of an environmental crimes unit, the NPS will begin this proactive approach with increased enforcement and dedicated educational programs for both the park visitor and park neighbors. Currently, the Service has no dedicated funding for criminal enforcement efforts which is needed to train employees in the environmental crimes area. Plans are already in place to support a training initiative in cooperation with the Environmental Protection Agency.

Site destruction. The National Park Service averages close to 400 documented violations where archeological resources are damaged or destroyed annually. These include Indian burial sites, tools, weapons, pottery, and baskets associated with historic and prehistoric subsistence and village sites; ceremonial sites; shipwrecks and associated artifacts. Park Service investigators have shut down organized Native American graves desecration activities returning the human remains to ancestral burial grounds considered sacred by the native people. Paleontological resources, ranging from complete dinosaur skeletons to fossilized amber crystals containing prehistoric animal embryos, are also being depleted by a growing illegal domestic and international market. In

addition to outright pillaging of public lands through illegal excavation, thefts of fossil resources have also occurred in NPS and other public museums.

Fossil theft cases have implicated violators involved in other criminal activity such as violations of the Archeological Resources Protection Act, illegal drugs and weapons trade, U.S. Customs, and Internal Revenue Service violations. To date, funding to provide enforcement protection of fossil resources has been minimal while documented violations have increased. Initial funding of a paleontological protection program in the Rocky Mountain region enabled rangers to uncover a major fossil poaching organization involving several States within the United States and South American countries. Servicewide ARPA funding in FY 2000 was $1.3 million. The use of these funds which have been distributed to the parks has resulted in an increase of hundreds of new cases with the added benefit of increased site protection throughout the NPS. The FY 2000 goal for this program is to increase these investigative efforts and to support additional multi-agency investigations. Some funds will be spent on increased training of investigative and resource protection staff and to support long-term (multiple year) investigations in areas where past activities have shown that looting and theft are still occurring and may be increasing.

Resources Protection Workload Factors	FY 1999 Actual	FY 2000 Estimate	FY 2001 Estimate
Number of commissioned rangers	1,483	1,493	1,493
Number of part-time rangers	591	581	581
Number of ARPA cases	339	312	290
Number of vandalism cases	3,796	3,606	3,052
Number of resource incidents	13,239	12,577	11,697

Alaska Subsistence

Within the State of Alaska, the National Park Service has a unique responsibility for resources protection as mandated by the Alaska National Interest Lands Conservation Act (ANILCA) of 1980. The act establishes provisions that prioritized consumptive use of fish and wildlife for rural residents of the State of Alaska. The NPS is responsible for monitoring the taking of consumptive resources on parklands. Priority over all other consumptive uses is to be provided based upon local rural residency, availability of alternative resources, and a customary and direct dependence upon the fish and wildlife populations as the mainstay of livelihood. In the past, the State of Alaska had been charged with assuring this priority. In 1989, however, the Alaska Supreme Court ruled that the State could not manage the use of public lands based on subsistence and be consistent with its constitution, which provides equal protection for all residents. Subsequently, Federal agencies are now charged with implementing the subsistence provisions on public lands as required by ANILCA. Minimal ANILCA requirements consist of protecting fish and wildlife resources on Federal public lands; studies to document subsistence use by area and species; development of management plans, policies and regulations for subsistence seasons and bag limits; and creation of an extensive public information/awareness system. Approximately $1.8 million is available to the Alaska Region and park bases for this program in FY 2000.

In FY 2000, the Federal program was significantly expanded, in response to a 1995 court order, to include fisheries management on approximately 60 percent of the navigable waters within the State of Alaska. An additional 800,000 of FY 1999 funds (to be spent in FY 2000) was made available to the NPS on a reimbursable basis from a Departmental appropriation for startup costs for the expanded fisheries program. The court-ordered assumption of

fisheries management has greatly expanded the complexity and controversial nature of the subsistence program. The scope of fisheries management in Alaska is immense and complex, particularly for the commercially important Pacific salmon species. Without adequate funding to responsibly monitor and manage stocks, the Federal Government could be forced to set ultra-conservative harvest levels which could limit commercial fisheries with severe economic impacts.

FY 2001 BUDGET REQUEST

	2001 Budget Request	Program Changes (+/-)
▪ Resources Protection $(000)	44,328	+2,158

The FY 2001 request for Resources Protection is $44.328 million, which represents an increase of $2.819 million over the FY 2000 enacted level. The FY 2001 proposed programmatic increase of $2.158 million to Resources Protection activities includes:

	$(000)
▪ Park Base Operations Increase	1,058
▪ Alaska Subsistence Fisheries Management	300
▪ Alaska Natural Resource Projects	300
▪ Resource Protection Act Implementation	500
Total	2,158

Justifications for these increases follow.

JUSTIFICATION OF FY 2000 BUDGET REQUEST FOR RESOURCE STEWARDSHIP

	2000 Budget Request	Program Changes (+/-)
Resource Stewardship $(000)	287,820	+29,555

The FY 2000 request for Resource Stewardship is $287.820 million and 3,132 FTE, which represents an increase of $33.817 million and 243 FTE above the FY 2000 enacted level. The programmatic increase of $29.555 million for the Resource Stewardship subactivity is justified by the proposed changes that follow:

Resource Stewardship (General)

▪ ***Park Base Operations Increase (+$7,466,000; +98 FTE***): The NPS is proposing an increase of $24.050 million and 300 FTE for parks in FY 2001 to address a number of specific operating needs at NPS units. As part of the NPS annual budget review process, park managers have identified and prioritized a wide range of unfunded operational needs. This funding proposal represents the highest priority core operational needs identified by park managers, as well as a number of special Servicewide initiatives developed over the course of the budget process to

meet the goals and objectives articulated by NPS and Departmental management. This funding would enable parks to increase operating hours at visitor centers, increase the offerings of tours and programs, fill key professional positions, continue educational partnerships with schools and outreach organizations, address increasing threats to security and safety and ensure the long-term health of park resources. This proposal is comprised of 97 increases for 71 park units, three national historic trails, two foundations that support park operations, 2002 Winter Olympics support, and the United States Park Police.

Four themes covering the spectrum of core park operations were determined as areas of emphasis and are addressed by this collection of park base increases. To allow the NPS to **Take Care of New Responsibilities**, $8,608,000 is requested; the proposal will **Provide for the Visitor Experience** with an additional $4,106,0000 requested; a total of $6,819,000 is identified to **Address Threats to Resources**; and $4,517,000 would **Correct Health and Safety Deficiencies**.

The specific increases contained in this proposal cut across functional categories as described by the NPS budget structure. Of the total amount of $24,050,000 requested, $7,466,000 and 98 FTE is estimated as the amount to be applied to the Resource Stewardship budget subactivity. For a more comprehensive examination of the park increases contained within this proposal (as well as the park increases requested as part of the Natural Resource Challenge and the Vanishing Treasures Initiative), please refer to the Analysis of Park Base Increases in the Summaries section of this budget document.

▪ ***Regional Office Park Support (+$295,000; +4 FTE):*** The National Park Service is proposing an increase of $2,107,000 and 27 FTE in FY 2001 for Regional Office bases to provide direct support to parks. This increase would provide $1,636,000 for enhanced information management capabilities and $471,000 to provide direct professional and technical support to park units in the area of concessions management. An increased workload resulting from new legislation, the addition of new park and heritage areas, and new initiatives, and a change in the capabilities most needed in today's work environment have severely compromised the ability of Regional Offices to provide needed support. The seven Regional Offices provide support to the park units under their authority in all activities.

Amounts requested by Region are as follows:

Alaska Region	$160,000	2 FTE
Intermountain Region	495,000	7 FTE
Midwest Region	290,000	4 FTE
National Capital Region	313,000	4 FTE
Northeast Region	233,000	2 FTE
Pacific West Region	320,000	4 FTE
Southeast Region	296,000	3 FTE

Information Management Support - This funding would allow the NPS to implement new information management mandates effectively by providing central computer, Geographic Information System (GIS), and other information support for parks at each of the seven Regional Offices. The Service is increasingly reliant on information management to perform its mission. Rapid changes in technology provide the means to gather, analyze and disseminate information more effectively to respond to inquiries and facilitate decision-making. In fact, the majority of NPS work is accomplished through data communications networks and the NPS Intranet. The NPS is also required to provide increased amounts of information to the public through the Internet. In addition, many new mandatory information driven requirements have been added to the NPS workload, including most recently the GPRA-related Performance Management Data System, Facility Management Software System and Interior Department Electronic Acquisition System. On average, each park is required to use over thirty in-house computer programs and numerous commercial software packages. Many parks are too small to have a computer or GIS

specialist. The demands on existing central staff far exceed current capabilities and grow as new systems/services are added. Parks are faced with a myriad of decisions on how to implement new systems. Without technical support, parks are unable to make efficient and effective decisions.

In order to take full advantage of technological improvements, to employ best practices in the conduct of day-to-day business, and to maintain currency in order to meet changing demands in the business environment, additional funding is needed to provide staff expertise, and evaluate hardware and commercial software service offerings for NPS applications. For example, the ability to acquire spatial data for use in park GIS mapping efforts and for making more informed resource and infrastructure decisions is critical to park management, but requires specialized expertise often best provided centrally.

This increase would complement Servicewide increases proposed for maintenance management, Web-based visitor information, data management specific to natural resources, as well as provide needed support of local and wide-area telecommunications networks. Each of the seven regional offices would receive a portion of the $1,636,000 requested for information management support.

Professional Support - This funding would also allow the NPS to enhance professional services provided to park units through increases to the funding base of four of the seven Regional Offices. In the interest of efficiency, most park units are dependent to varying degrees upon support services from regional and support office specialists to accomplish their mission and GPRA goals. This portion of the increase would focus on the financial analysis of concession operations and implementation of new concessions legislation contained in the National Parks Omnibus Management Act of 1998 (Public Law 105-391), which established major new responsibilities for concessions management. New or expanded responsibilities mandated by the law include completion of commercial services planning; contracting; financial analysis, review and fee benefit package determinations; determination of lease hold surrender interest and tracking of that interest, service review, and tracking of operational activities; and administrative contracting for services and work (contracting with private consultants/contractors, indefinite quantities contracting, architect and engineering firm contracting, and appraisals). The Intermountain Region, for example, has 260 concessions contracts of which 173 will be expired at the end of 1999. Beside creating a sizable backlog of work, the legislation will require shorter terms for contracts, further straining existing staff. Additional training, assistance, and oversight will be necessary to ensure consistency and accountability at the park level
The specific increases cut across functional categories as defined by the National Park Service budget structure. Of the total amount requested, $295,000 and 4 FTE is estimated as the amount to be applied to the Resource Stewardship budget subactivity.

- ***Alaska Subsistence Fisheries Management Projects (+$1,034,000; +10 FTE):*** The NPS is proposing an increase of $1.034 million and 10 FTE in FY 2001 for Alaska Subsistence. The added funding is needed to carry out a court-ordered Federal subsistence fishery program on more than 18,000 miles of rivers and streams in NPS areas in Alaska. Within the State of Alaska, the National Park Service has a responsibility for resources protection as determined by the Alaska National Interest Lands Conservation Act (ANILCA) of 1980. The act establishes provisions that prioritized consumptive use of fish and wildlife for rural residents of the State of Alaska.

The NPS has responsibility for monitoring the taking of consumptive resources on parklands. Priority over all other consumptive uses is to be provided based upon local rural residency, availability of alternative resources, and a customary and direct dependence upon the fish and wildlife populations as the mainstay of livelihood. In the past, the State of Alaska had been charged with assuring this priority. In 1989, however, the Alaska Supreme Court ruled that the State could not manage the use of public lands based on subsistence and be consistent with its constitution, which provides equal protection for all residents. Subsequently, Federal agencies are now charged with implementing the subsistence provisions on public lands as required by ANILCA. Minimal ANILCA requirements consist of protecting fish and wildlife resources on Federal public lands; development of management plans, policies and regulations for subsistence seasons and bag limits; and creation of an extensive public information/awareness system. This funding is required because the Federal Government substantially expanded

its management of subsistence fishing on Federal waters on October 1, 1999, when the State Legislature failed to act to bring the State into compliance with the Alaska National Interest Lands Conservation Act. Federal agencies have managed a subsistence program for wildlife since 1989, but only a minimal program for fisheries. In response to a Ninth Circuit Court decision, the Secretaries of the Interior and Agriculture must expand their responsibility for managing the subsistence fisheries in all navigable waters, where there are reserved water rights, on and adjacent to Federal conservation system units in Alaska. Fisheries management in Alaska is immense and complex, particularly for commercially important salmon species. Field work related to resource/harvest monitoring will be conducted primarily through the use of contract awards to the State of Alaska and Native Alaskan groups by the U.S Fish and Wildlife Service.

This request is a component of the National Park Service's Natural Resource Challenge.

▪ ***Alaska Natural Resource Projects (+$550,000):*** The NPS is proposing an increase of $550,000 in FY 2001 for natural resource projects in the State of Alaska. The proposed funding would allow the NPS to undertake a Servicewide series of projects to better protect resources. The proposed FY 2001 program would include a study on Bear/Human Interactions, studies on Arctic Animals, Glacier Bay State/Federal Cooperative Fisheries Research, and Marine Mammal Partnerships. Funding would be used to establish baseline data on the natural and cultural environment, analyze ecosystem relationships, study the effect of human interactions on resources, and provide effective and accessible management of data. This increase is proposed as part of the Natural Resources Preservation Program.

The NPS is one of four DOI agencies participating in the Departmentwide Tundra to Tropics initiative. Other agencies include the Bureau of Land Management, the Fish and Wildlife Service and the U.S. Geological Survey. Descriptions of NPS projects proposed for FY 2001 follow:

- Bear/Human Interactions [+$150,000] - This funding would be used to evaluate density and populations of black and brown bears and the response and causes of bear and human conflicts to ensure the safety of visitors in bear country and the survival the bear population. Cooperating agencies include the Fish and Wildlife Service, the U.S. Geological Survey/Biological Resources Division, and the Alaska Department of Fish and Game.
- Glacier Bay State/Federal Cooperative Fisheries Research [+$150,000] - This funding would be used to: (1) prepare a comprehensive marine fisheries research framework for commercially exploitable species and community-level effects of fisheries, (2) organize partnerships to facilitate marine fisheries research at Glacier Bay, (3) develop an enhanced Glacier Bay research program and disseminate information to the public, and (4) work to understand the connection between Alaska Native peoples and the marine environment of Glacier Bay. Cooperating agencies include the Alaska Department of Fish and Game, universities, nonprofit Glacier Bay Marine Fisheries Research Foundation, U.S. Forest Service, Corps of Engineers and the Hoonah Indian Association.

- Arctic Animal Studies [+$100,000] - This funding would be used to evaluate predator/prey relationships, the natural productivity of sheep and caribou, and the impact of sport and subsistence hunting on these animals. Cooperating agencies include the Alaska Department of Fish and Game, and the U.S. Geological Survey/Biological Resources Division.

- Marine Mammal Partnerships [+$150,000] - This funding would be used to understand the population trends and ecology of key marine species in Alaska coastal parks; and to compare the effects of natural changing oceanic regimes on marine mammals from human impacts associated with commercial tour boat operations, jet skis, and sport and commercial fishing and kayaking. Cooperating agencies include the Fish and Wildlife Service, the U.S. Geological Survey/BRD, Alaska SeaLife Center, National Marine Fisheries Service, and the University of Alaska.

This request is a component of the National Park Service's Natural Resource Challenge.

Park Management/Resource Stewardship

Natural Resources

▪ ***Cooperative Ecosystem Studies Units (+$1,600,000; +6 FTE):*** The NPS is proposing an increase of $1.6 million and 6 FTE in FY 2001 for Cooperative Ecosystem Studies Units (CESUs). A network of CESUs is being established with leadership from the NPS, the USGS, and other Federal agencies. These units are interdisciplinary, multi-agency partnerships with research universities organized in broad biogeographic areas. Each unit includes a host university, additional university partners, and Federal agencies. Individual Cooperative Ecosystem Studies Units are part of the network, operating under a memorandum of understanding between several Federal agencies.

The network enables the NPS to partner with other Federal agencies and the Nation's universities to deliver high-quality science, usable knowledge for resource managers, responsive technical assistance, continuing education, and cost-effective research programs. Cooperative Ecosystem Studies Units provide specific benefits to the NPS, including: (a) a broadened scope of scientific services for park managers (e.g., research and resource management are better integrated to solve interdisciplinary management problems), (b) enhanced collaboration between the NPS, other Federal agencies, and universities to address complex landscape-level management issues, (c) enhanced technical assistance, education and training, and planning support to NPS managers, and (d) increased diversity in NPS resource management (e.g., by including Historically Black Colleges and Universities, Predominantly Hispanic Serving Institutions, and Native American Tribal Colleges in the network).

Through a formal competition, agreements were executed in FY 1999 for four pilot Cooperative Ecosystem Studies Units: Colorado Plateau, Rocky Mountains, Southern Appalachian Mountains, and North Atlantic Coast. They began operation in late FY 1999 and early FY 2000, developing role and mission statements and multi-year strategic plans, and organizing managers committees to advise and guide their activities. Research, technical assistance and education efforts were initiated with the agreements. The NPS participated in the pilots in FY 1999 and FY 2000 by transferring modest project funds from cluster and regional budgets and, in some cases, by assigning collateral duties to existing cluster and regional staff. In addition, a second round of competitions was begun, with the selection and establishment of additional units occurring in FY 2000.

Through the proposed FY 2001 increase, the NPS will be able to fully and actively participate in eight Cooperative Ecosystem Studies Units (four pilots plus four additional units being established in FY 2000), some serving additional biogeographic areas, and others organized around specific ecological systems such as coral reefs, caves, urban environments, or coastal areas. The funding will enable the NPS to: provide one position at two of the pilot and four of the additional CESUs; support individual units; and, provide project funds in the cluster of parks served by each CESU. These positions will broker assistance for the NPS from universities and other Federal partners. National Park Service staff will work with parks to identify needs that these units will meet through research, technical assistance, and education, and then identify and involve specialized expertise and assistance from the universities and other Federal agency staff.

This request is a critical component of the National Park Service's Natural Resource Challenge, which specifically calls for strengthened partnerships with the scientific community. A key goal of this initiative is that the management of the National Park System is improved by greater reliance on scientific knowledge, and it calls for expanded NPS collaboration with Federal and university partners.

Cooperative Ecosystem Studies Units will help meet NPS objectives and assist parks by facilitating research, technical assistance, and education for NPS managers, and encouraging Federal agencies to work together, thereby providing significant, cost-effective support for science in the parks and park management.

▪ ***Establish Learning Centers (+$900,000; +8 FTE***): The NPS is proposing an increase of $0.900 million and 8 FTE in FY 2001 to establish natural resource learning centers. Current infrastructure is inadequate for national parks to become laboratories for science to benefit society and to help NPS preserve parks. There needs to be

additional capacity both to host research and to extend knowledge gained to the public. The plan is to develop, with substantial private assistance, a total of 32 learning centers, with four such centers funded through the proposed FY 2001 increase. The NPS funding will be a stimulus for attracting non-NPS participation in the learning centers. Critical needs are housing, lab and class space, in-park logistical support, and Internet/computing access. The centers will be located in gateway communities or parks as appropriate. Their scope will vary from modest housing for three to five scientists to facilities for 20 to 30 researchers and several projects. Where possible, facilities will utilize existing structures or renovate and adapt existing ones showcasing sustainable practices. Centers will serve a network of parks. Funding will be used initially to match other funds to establish the centers. As centers are established, they will be staffed with a research/center coordinator and an education position.

Investment in infrastructure will facilitate and encourage Federal scientists, faculty, graduate students, and other researchers from all disciplines to use parks as places of inquiry. Providing such infrastructure will also leverage NPS fiscal resources by attracting outside sources of funding to support science in the parks. Facilities will utilize existing structures (through rental agreements, the NPS Housing Program, or through other partnerships) or renovate and adapt existing structures, possibly, historic structures, where possible. New construction based on sustainable design principles may also be involved where appropriate. These facilities will bring researchers closer to the parks' natural resources, facilitate collaborative studies, assist the park staff, and obtain greater direct and in-kind financial support. Parks with interdisciplinary resource management staffs will provide more program continuity and achieve better products. By providing access to park resources and limited park logistical support, these centers will leverage significant financial and research assistance for projects identified by park managers.

Facilities will serve a network of parks, and will be established especially to reflect parks engaged in a cooperative monitoring network. The monitoring data derived from these networks will serve as a stimulus to research. Priorities for renovation, acquisition, or construction will be based on need, the potential for leveraging external funds with NPS resources, and demonstrated interest of scientists.

The research/center coordinator will identify and involve specialized expertise in universities, the BRD/USGS, and other agencies that can meet park needs. There are also numerous opportunities for external research grants, matching funds, and other forms of support. The challenge for NPS is to maximize these opportunities, and to coordinate scientific activities for maximum benefit to the parks and society. Coordinating, identifying, and marketing of research opportunities, science planning, and overall science administration are all essential to science in the parks.

An education specialist at each learning center will identify target audiences and develop informational materials specifically for various segments of society that make resource issues relevant and personal to them. Successfully protecting park resources can not be done without the assistance of the national community at large. It is critically important that we involve our constituents in the preservation and restoration process. Scientists and the general public must help us to identify and implement effective strategies to solve the myriad resource issues facing us as often park resources are impacted by forces that originate outside of park boundaries. We must be able to explain resource issues in terms understood by wide audiences and in ways that encourage participation. The education specialist will be able to do this and also coordinate public volunteers to aid in monitoring and education about monitoring.

By facilitating an increase in research and information dissemination, this increase is broadly supportive of the mission goal of managing resources based on adequate information. It will also allow an undetermined increase in the strategic plan goal of improving the extent to which park visitors -- as well as the public who does not visit parks -- understand and appreciate park resources. A significant objective of the learning centers -- in addition to facilitating increased research in parks -- is to assure that information about parks is made broadly accessible.

This request is a component of the National Park Service's Natural Resource Challenge.

Park Management/Resource Stewardship

▪ ***Invasive Species Control/Threatened and Endangered Species Recovery at Parks (+$3,400,000; +41 FTE):*** The NPS is proposing an increase of $3.4 million and 41 FTE in FY 2001 in increases at 17 parks that respond to the Natural Resource Challenge by addressing issues of exotic, threatened, and endangered species. More than 160 parks provide important habitat for endangered species' restoration because of the parks' protected status. There are at least 168 species listed under the Endangered Species Act, which are on NPS lands and have recovery plans. These tasks run the gamut of conservation activities from the reintroduction to the control of competing exotics and from public education to law enforcement patrols. The importance of endangered species activities is reflected in the Service's long-term goal Ia2: Threatened and Endangered Species. Likewise, exotic (invasive non-native) species are displacing natural vegetation and adversely impacting entire ecosystems, and displacing all types of native species, including those that are threatened or endangered species.

This increase will allow parks to address natural resource issues including the implementation of the range of park level resource management activities needed to preserve native species. At Mojave National Preserve (California), funding would protect the Federally-listed desert tortoise by surveying populations, patrolling roads to prevent illegal collection, and managing grazing and permittee activities within rights-of-way containing critical habitat or habitat used by existing tortoise populations. In the Great Smoky Mountains National Park (North Carolina, Tennessee), alien species of plants, fish, and wild hogs that are destroying native ecosystems will be controlled with the cooperation of adjacent landowners. At Saugus Iron Works National Historic Site (Massachusetts) two acres of wetlands will be restored to their natural condition, while exotic species are documented and mitigated.

With this proposed increase, another 11,200 acres per year of exotic species could be controlled, above the annual goal. This would mean that NPS could control 8.3 percent of targeted disturbed lands, instead of the 5 percent targeted in its 1997 Strategic Plan. The low FY 1997 target was based on fiscal constraints. This increase will also address the Park Service's goal to stabilize or increase park populations of threatened and endangered species. It will allow parks containing populations of threatened and endangered species to undertake recovery actions, protect critical habitat, or determine the status of these species. Based on a review of strategic plan-related data, these parks have identified 137 applicable populations of threatened or endangered species in their goals. More detail on the proposed use and projected results of the requested funding is provided in the Analysis of Park Base Increases in the Summaries section of this document.

This request is a component of the National Park Service's Natural Resource Challenge.

▪ ***Inventory and Monitoring Program – Vegetation Mapping (+$1,750,000)*****:** The NPS is proposing an increase of $1.750 million in FY 2001 for vegetation mapping. Funding is requested to complete the vegetation mapping component of the inventory and monitoring program. The USGS funds and cooperates with the NPS to produce detailed, computerized maps of the vegetation of National Park System units that meet National Mapping Accuracy Standards. By cost-sharing this component with the USGS, this inventory component will be completed in a useful timeframe. Vegetation maps are usually the highest park priority because of their utility in a wide variety of habitat, animal, and other resource management. Vegetation maps are also an essential step in developing fuels maps for fire management. This proposal would complete vegetation maps for all natural resource park units located outside of Alaska (approximately 240 units). This funding would allow all 240 units outside Alaska to be mapped over a period of about nine years, assuming continued USGS participation and funding. The increase alone would fund vegetation maps for an average of 15 parks per year.

The USGS cooperates with the NPS to produce detailed, computerized maps of the vegetation of National Park System units. Through this program, a variety of data and information on vegetation are made available both to park managers and to Internet users. Using a set of standards and flexible protocols, vegetation mapping program scientists and technicians are developing consistent and standard vegetation information products for all applicable parks. The minimum standard product is a digital map that meets National Mapping Accuracy Standards at a scale of 1:24,000. The park vegetation is mapped at a minimum mapping unit of ½ hectare at the cover

type/community level of the Federal Geographic Data Committee National Vegetation Classification Standard. This requires substantial field work to develop and to ground truth the vegetation information. A stringent set of quality control procedures are utilized to make certain that the products are replicable for monitoring purposes and to allow systematic comparisons at different time periods and at different levels and geographic areas across the United States. Work by the the USGS/Biological Resources Division has resulted in a program and procedures that are broadly useful outside the NPS as well. The design phase of the program is complete and has been recently evaluated and the program is being implemented. However, at the current funding level, over 30 years will be required to complete all mapping for the parks. Therefore, the NPS proposes to cost-share funding with the USGS to complete the mapping in a useful timeframe.

Vegetation mapping is also an essential first step for developing the fuels maps and assessments required under a Joint Fire Science Plan to support the prescribed fire and hazard fuels reduction program. In 1998 Congress approved a major expansion of prescribed burning for hazardous fuels reduction and for ecosystem restoration to implement the 1995 Federal Wildland Fire Management Policy. A specific focus of the joint fire science plan is to "implement consistent interagency fuels mapping inventories with common classifications and resolution within ecosystems" to help managers identify "the location of hazardous fuels, determine where fuels have accumulated beyond the historic range of variability, determine potential impact of current fuel conditions on fire regimes and ecosystem processes, determine where fire damages and costs are increasing, recognize the most at-risk fuel/fire regime components, set priorities for treatments, and determine the appropriate type and frequency of treatment." The first generation national fuels map has been completed and will be presented to Congress this October, but this map needs much refinement to be useful to local land managers in quantifying resource management goals and objectives for wildland fire. The work proposed in this request is critical to implementing NPS wildland fire management policy, and will allow the NPS to speed up the fuels mapping concurrently with the rapid expansion of prescribed burning. The NPS prescribed burning program is projected to increase from $4.5 million and 70,000 acres treated in 1997 to $13.2 million and 134,000 acres treated in 2001. The increase in vegetation mapping will allow the USGS/BRD to focus on early completion of maps for key parks that support most of the wildland fire activity. These maps will help ensure that the relationships between fire, fuels and ecosystem processes are properly understood, and will help reduce the risk that catastrophic wildfires will further degrade ecosystems and place public and private property, and public safety at risk.

This request will increase the Park Service's ability to meet its mission goal to make management decisions about resources and visitors based on adequate scholarly and scientific information. Currently, the long-term goal to implement this mission goal addresses eleven of twelve natural resource data sets required, at a minimum, by parks. This increase will allow the Service to set an even higher goal of a total of 2,527 data sets-representing all twelve of the information sets. With this increase and continued USGS funding at current levels, approximately 87 percent of the outstanding data sets would be completed by 2005, the end of the current 5-year GPRA planning period.

This request is a component of the National Park Service's Natural Resource Challenge.

***Inventory and Monitoring Program - Vital Signs Monitoring (+$4,200,000; +45 FTE)*:** The NPS is proposing an increase of $4.2 million and 45 FTE in FY 2001 to establish a vital signs monitoring network. This increase will allow for the development of measurable vital signs for the first phase, which, when fully funded, will involve all parks with extensive natural resources. The first phase will involve five park networks or groups of parks -- up to about 55 individual parks.

The National Park Service needs a clear and simple way to account for how it is preserving the Nation’s natural resource heritage. Preservation of healthy parks depends on acquiring timely and accurate information about the condition of natural resources, monitoring how conditions change over time, and acting on that information with confidence. Currently, a small network of parks is testing monitoring approaches. These prototype programs

indicate that selected environmental measures can serve as 'vital signs' of parks. The National Park Service needs to identify and monitor the vital signs of environmental health in all its parks with natural resources in order to sustain the health of park resources, diagnose threats to their well-being, and mitigate those threats.

Parks with similar resources share many of the same environmental vital signs. Networks of parks occurring in the same biomes can share technical expertise and infrastructure burdens to sustain vital signs monitoring. Currently there are eleven identified prototype-monitoring programs, that include 22 units of the National Park System, designed to explore site-specific strategies and protocols for identifying and measuring environmental vital signs. Other parks sharing these biomes will be added to the prototype programs to form clusters and twenty-one additional programs, that include 238 parks, will eventually be needed. Standard monitoring protocols exist for many common ecosystem elements and processes, such as birds, mammals, amphibians, reptiles, fish, arthropods, vegetation, plant populations, water, weather, and air quality. Experience in prototype parks and from other studies can be adapted for park networks without extensive research. Thus, all parks eventually will have access to professional staff and effective programs to monitor the most critical park vital signs. Professional staffs will be located in places that are selected by the parks in each network and will likely be park-based, but could include universities or regional cities. Parks will be grouped to ensure that workloads and technical expertise are roughly equal for all 32 cluster programs serving 260 parks.

Only seven of the eleven identified prototype programs currently have some degree of funding; three are fully funded and operational. This program would build on the prototype experience, but shift the strategy to one that is less intensive on a park-by-park basis, instead using a more extensive approach to provide some level of monitoring at more parks. The first phase of the vital signs monitoring proposed for funding in FY 2001, will fund additional parks in two networks with prototype programs underway, and fund three additional networks, including three of the four unfunded prototypes. For example, Cape Cod National Seashore is one of the currently funded prototype programs. Under the new program, Cape Cod National Seashore would join with seven other parks sharing its northeast coastal and barrier characteristics, such as Fire Island National Seashore and Gateway National Recreation Area, sharing expertise to implement the most critical vital signs monitoring at those parks. Networks to be funded in FY 2001 would, in addition to the Northeast Coastal Barrier network (containing Cape Cod), include the North Coast and Cascades network (7 parks), the Mid-continent Prairie network (16 parks), the Southern Desert West network (10 parks), and the Appalachian and Gulf Plains network (14 parks). Related increases for water resource monitoring is included in a separate funding proposal.

This request is responsive to the NPS mission goal to base management decisions about resources and visitors on adequate scholarly and scientific information, which in turn will increase the Service's ability to meet its resource preservation goal. The 1997 long-term goal related to natural resource information addresses inventories-one-time surveys to determine the presence of resources. A long-term goal to systematically acquire continuous information on the condition of resources has not been possible due to fiscal constraints. This request will allow the NPS to implement higher goals for information availability to meet its broad mission goals.

This request is a component of the National Park Service's Natural Resource Challenge.

▪ ***Water Resources Restoration and Protection (+$825,000):*** The NPS is proposing an increase of $825,000 in FY 2001 for water resource protection and restoration projects. The NPS Water Resources Program provides technical assistance and project funding to parks in the areas of water rights, water quality, water resource planning, floodplain and fisheries management, watershed and wetland protection, water resource-related policy and regulatory analysis, water resource data analysis and interpretation, and training. There are currently approximately $100 million in identified water resource related project needs in parks. In FY 2000, approximately $700,000 was available for water rights projects and approximately $805,000 was available for water quality and wetlands projects. As such, an increase of $825,000 represents a substantial increase in capability to address the water resource project backlog facing the parks.

Park Management/Resource Stewardship

Over 250 units of the National Park Service contain rivers, lakes, reservoirs, streams, springs, and wetlands, including 18 national riverways, 14 national seashores and lakeshores, and 12 parks containing major reservoirs. Numerous others, such as Yellowstone National Park, Katmai National Park and Preserve, Everglades National Park, Yosemite National Park, and Big Bend National Park, contain nationally designated wild and scenic rivers and/or State-designated Outstanding National Resource Waters. Many of these waters and related aquatic and riparian resources are in good condition but are threatened with impairment. Others are in an impaired state and require restoration. The NPS is very limited in its ability to design and carry out effective protection and restoration measures. The present water resources program does not provide sufficient project support to protect and restore critical water resources. To address these needs, this request proposes to increase funding for projects for pressing water rights issues facing units of the National Park System.

The need for project funding is particularly acute in the area of water rights. In FY 2000, the NPS is expected to be involved in 38 water rights adjudications. The Service tries to settle issues related to securing adequate water for its parks through negotiated settlements, rather than through litigation. This requires that the Park Service have adequate data on which to base settlement discussions, as well as to meet court-dictated deadlines over which it has no control. In FY 2000, the NPS expects to be able to fund only fourteen water rights-related projects in parks.

In FY 2001, additional project funds would support technical investigations and studies that are needed to support water rights claims for units of the National Park System. Investigations and studies would address surface water and ground water resources and natural systems dependent on these waters. The resulting information would be used to develop water rights claims and assist the NPS in negotiating water rights settlements. While the NPS is faced with water rights issues in both the Eastern and Western United States, additional project funding in FY 2001 would be focused on pressing water rights needs at parks in the Southwest and Rocky Mountain West. In addition to the water rights work, the NPS in FY 2001expects to fund approximately 36 water resource projects in parks and to assist parks with over 500 technical assistance projects, a small portion of the needs reflected in the $100 million water resource project backlog.

This request is a component of the National Park Service's Natural Resource Challenge.

- ***Water Quality Monitoring (+$1,275,000; +12 FTE***): The National Park Service is proposing an increase of $1.275 million and 12 FTE in FY 2001 to monitor water quality in parks. The NPS Water Resources Program currently provides technical assistance and project funding to parks for short-term water quality assessments. The Park Service has also implemented partnerships with the U.S. Geological Survey (USGS) to include parks in National Water Quality Assessment study basins and, under the Clean Water Action Plan, support water quality monitoring projects in parks; however, only a small number of parks are addressed by these USGS programs. As such, the NPS has no Servicewide ability to provide water quality monitoring in the vast majority of units of the National Park System with significant water resources, nor is there the ability to measure performance in achieving water quality protection goals.

Over 250 units of the National Park System contain rivers, lakes, reservoirs, streams, springs, and wetlands, including 18 national riverways, 13 national seashores and lakeshores, and 12 parks containing major reservoirs. Numerous others, such as Yellowstone National, Katmai, Everglades, Yosemite, and Big Bend National Parks, contain nationally designated wild and scenic rivers and State-designated Outstanding National Resource Waters (ONRWs). The NPS is very limited in its ability to detect and assess changes in the quality of these waters and to evaluate threats resulting from an array of sources and activities (both external and internal). This prevents the quantitative measurement of progress toward meeting water quality goals in the NPS's Strategic Plan developed under the Government Performance and Results Act. To address these needs, this request proposes to establish an ongoing Servicewide program to monitor water quality in parks.

Park Management/Resource Stewardship

In fiscal year 2001, funding would implement water quality monitoring in 12 park networks, or groups of parks. This would be the first of a series of monitoring programs proposed to be established in 75 park units. Monitoring stations would be located in parks with impaired waters, such as Lake Mead National Recreation Area, Grant-Kohrs Ranch National Historic Site, and Valley Forge National Historical Park. Monitoring stations would also be established in parks with State-designated ONRWs such as Yosemite, Acadia, and Grand Teton National Parks and Saint Croix and Ozark National Scenic Riverways as well as parks with outstanding water resources that do not currently have formal designations, such as Bandelier National Monument and units in Alaska.

Monitoring will be coordinated by the NPS Water Resources Division and implemented by NPS water resource specialists and technicians stationed in the parks or by cooperators such as the USGS, as appropriate. Monitoring will also complement and be coordinated with ongoing water quality monitoring activities of the U.S. Geological Survey and other entities. A set of nationally consistent data will be collected, as well as data to meet site-specific needs. Data will be entered into the Environmental Protection Agency's STORET water quality database. This activity will enable the Park Service to begin to address its principal challenge with respect to water resources -- that the NPS has no Servicewide ability to monitor water quality in units of the National Park System with significant water resources.

The NPS Strategic Plan's long-term goal for water quality establishes a goal that 85 percent of parks will have unimpaired water quality by 2005. While the Service is in a position to qualitatively assess the achievement of this goal in a general manner, the proposed monitoring program will ultimately provide water quality monitoring capability to approximately 25 percent of parks with significant water resources. For this set of parks, there will be adequate park data to quantitatively assess water quality conditions, thus permitting the NPS to measure in a scientifically credible and defensible manner whether this goal is achieved. Further, this proposed monitoring program will provide a quantitative basis for working with regulators and identifying and mitigating water pollution sources to eliminate or reduce water quality degradation, thus helping to ensure that this water quality goal for the NPS is met.

This request is a component of the National Park Service's Natural Resource Challenge.

▪ ***Air Quality/Reduce NPS Air Emissions (+$200,000; +1 FTE***): The NPS is proposing an increase of $200,000 and one FTE in FY 2001 to improve air quality in the national parks. Air pollution in parks would be inventoried for compliance with air pollution control, licensing, and emission fee requirements; and strategies and mechanisms for reducing or preventing pollution would also be developed. This increase is requested to inventory air pollution sources in parks for compliance with air pollution control, licensing and emission fee requirements. Strategies for reducing or preventing pollution caused by park operations or management practices would be identified, with particular emphasis on smoke from wildland fires and vehicle-related issues. Guidance documents and manuals would be developed and disseminated. Cooperative mechanisms for funding the installation of pollution control equipment, use of alternative fuels, or alternative management practices would be explored.

In fiscal year 2001, funding would be used to implement an emission inventory program in 20 parks, enhance air resource protection expertise within the Air Resources Division to address compliance issues (particularly related to smoke management), and develop pollution control and prevention guidance for parks.

Air pollution generated within parks contributes to local and regional air quality problems, affecting public health, visibility and other resources. Pollution sources include vehicles (on-road, off-road, watercraft and snowmobiles), energy generation (boilers, generators), maintenance activities (painting, landscaping equipment), woodburning, and prescribed fires. These emission sources would be audited to estimate potential emissions and determine compliance with any applicable regulatory or permitting requirements. Guidance on available pollution control and prevention technologies and practices would be developed. Partnership opportunities and other cooperative mechanisms would be identified for funding pollution abatement projects, including conversion to alternative fuels, renewable energy or more efficient engines. Expert assistance would be provided to parks with active fire

programs to ensure adequacy of smoke management plans from an air quality regulatory standpoint, including facilitating required interaction with regulatory officials and approval of burn plans.

This request is a component of the National Park Service's Natural Resource Challenge.

▪ ***Natural Resource Data Management and Distribution (+$1,250,000; +8 FTE***): The NPS is proposing an increase of $1.250 million and 8 FTE in FY 2001 for natural resource data management and distribution. Limited capability exists to effectively manage natural resource inventory data and make it available to natural resource decision-makers and the public. Funding will allow the Natural Resource Information Division to: (1) develop, manage, and link biotic, abiotic, and bibliographic databases, (2) expand and maintain a website and other learning tools for field managers and the public, and (3) fund park and System natural resource condition report cards. This increase will allow the NPS to exceed its goal of integrating NPS data systems (performance goal IVa1) and will directly support the mission goal to base management decisions about resources and visitors on adequate scholarly and scientific information by making such information available to managers. This increase is composed of three parts (Integrating Natural Resource Data, Information Tools for Resource Management and Education and Vital Signs Reports) which are described below.

Part 1: Integrating Natural Resource Data [+$700,000; +5 FTE] - This increase represents the natural resource component of a larger Servicewide integration of data (ParkNet). The Natural Resource Information Division would develop and manage standardized databases for biotic and abiotic inventories, link these to park-based and other Servicewide databases, and update and maintain a consolidated bibliographic database of all parks' natural resource information and natural resource program information. Maintenance of standardized data sets would provide tools and information for parks, Systemwide resource information, and data of interest to the scientific community. Broadly available data will stimulate research and data synthesis and interpretation about park resources.

This portion of the needed increase is predicated on five data management positions and funding to acquire and maintain software and systems, as well as contractual assistance as needed. Funding to acquire new inventory data is included elsewhere. One of the five positions would be duty stationed in the Information and Telecommunications Division. This position would focus on the link between natural resource data and an integrated, Servicewide infrastructure for park inventories. One position each would be dedicated to the bibliographic database and the NR-MAP database. The other positions will focus on database administration.

Part 2: Information Tools for Resource Management and Education [+$400,000; +3 FTE] - The increasing complexity of both the scientific and policy arenas of this information age, coupled with more sophisticated inventory and monitoring within and around parks, has implications for data management. It requires that park managers and resource professionals have rapid access to data (see Part 1) and tools to make this information useable on a daily basis. The NPS needs to expand the use of information systems (e.g., internet, intranet, GIS, decision-support models) to put this information at the fingertips of the people in the field. Successful techniques and approaches must be rapidly "packaged" for use by other practitioners. In addition to scientific information, decision-makers in the public arena need a better understanding of, and access to, legal and policy tools that will allow them to more effectively protect park resources and values. Rangers also will benefit from more sophisticated approaches to park resource protection, law enforcement, and interpretation that target vulnerable natural resources in parks, such as sensitive species, and native flora and fauna. While the Information and Telecommunications Division's ParkNet program will assist in making the information systems available, the natural resource program must interpret and package relevant inventory and other information for use by resource managers, rangers, interpreters, and others.

The public also needs better information. The public does not generally recognize or understand the significance of parks as preserves of our Nation's natural heritage. The disciplines of natural resources and interpretation/education are insufficiently integrated throughout the National Park Service. This increase would

also establish a three-person, interdisciplinary team to design, implement and maintain a significantly expanded NPS natural resource website as a hub for learning and information. The expanded website would include constantly updated information on research findings and needs and new resource management techniques and issues, as well as information for educational programming and interpretive materials. Persons working with natural resource data, but dedicated to interpretation and education, will help meet needs for more understandable and compelling information about park natural resources. One of the positions, the interpretive liaison, would be duty-stationed in the Interpretation Division to best forge this link and consult on development of non-web interpretation elements of natural resource projects.

Part 3: Vital Signs Reports [+$150,000] - The public needs to be advised of the status and trends of its natural heritage preserved in the National Park System. Just as corporate manager's report to stockholders annually on the condition of their firms, the NPS will provide in simple clear language the results of an annual check-up on each park. The NPS can demonstrate its accountability for preserving natural heritage. With reporting, the scientific community will be able to ensure the validity of environmental vital signs monitoring results. The reports will address vital signs such as air, water, soil, and biota, reporting annually what is known of park vital signs, the normal range of vital sign variation (define what healthy means), abnormal conditions requiring treatment, and proposed remedial and mitigating actions. The reports will focus on outcomes (actual vital sign values); two-page park reports, plus a National Park System Report to be produced by available inventory and monitoring program staff.

This request is a component of the National Park Service's Natural Resource Challenge.

▪ ***California Desert Restoration (+$1,500,000):*** The NPS is proposing an increase of $1.5 million in FY 2001 for the California desert. The $1.5 million funding request for the National Park Service will be used as part of a coordinated, interagency effort to manage the following projects: wild burros, restoration of damaged upland and riparian habitats, clean up of illegal dumps, monitoring of desert tortoise populations and assessing the quantity and importance of water resources in the California deserts. These projects will be accomplished by the NPS in partnership with the Bureau of Land Management (BLM), the Fish and Wildlife Service (FWS), the U.S. Geological Survey (USGS), the Department of Defense, and the State of California under the auspices of the California Desert Managers Group.

Wild Burro Management Strategy [+$700,000] - The uncontrolled populations of wild burros have lead to extreme overgrazing, local extirpation of some native species, and diminished biodiversity around spring areas. The FY 2001 funding will allow the NPS to participate in the interagency Strategic Plan for the Management of Wild Burros, which established goals and objectives for Department of the Interior, State agencies and the military to work together to manage wild burros in the most effective and efficient manner possible.

Upland and Riparian Site Restoration [+$200,000] - The human activities in the California desert (e.g., unplanned development, illegal off-highway vehicle use, and mining) have extensively damaged desert lands. The invasion and spread of exotic plants such as salt cedar or tamarisk, has impacted most riparian areas and spring habitats in the desert. Salt cedar effectively out competes native plants, provides few wildlife benefits, uses massive amounts of water, and is often so dense that wildlife can not access critical water sources. The FY 2001 funding will allow the NPS to participate in a coordinated interagency effort with BLM to restore five upland and five riparian sites in the California desert.

Cleanup and Site Restoration of Unauthorized Dumps [+$150,000] - During an extended period of time, the California desert has served as an easy site to illegally dispose of refuse, and as a result, numerous dumps are found on NPS lands in the California desert. These illegal dumps are an unsightly visual impact, threaten public health and safety by contaminating ground water, and encourage the improper disposal of hazardous wastes. Illegal dumps may also attract ravens that in turn may prey on juvenile desert tortoises. The FY 2001 funding will be used to clean up and restore five illegal dumpsites and to implement an interagency program to reduce illegal dumping in the future.

Park Management/Resource Stewardship

Desertwide Tortoise Monitoring Program [+$200,000] - The desert tortoise lives over large portions of the desert and is a significant factor affecting public and private land use in many areas. For example, the use of livestock grazing on NPS and BLM lands is currently being challenged based on the potential impact to the desert tortoise. Currently, there is no coordinated program to monitor the status and trend in tortoise populations. The FY 2001 funding will allow the NPS to work with the Fish and Wildlife Service, the Bureau of Land Management, and the Department of Defense to implement a range-wide desert tortoise monitoring program.

Desert Water Resources [+$250,000] - Springs, wetlands, riparian areas and other water dependent habitats are highly significant in the California desert because they are rich in bio-diversity, support numerous endangered, threatened and sensitive/endemic species, and provide desirable recreational opportunities for visitors. Insufficient hydrologic and biological data restricts the ability of land managers to readily analyze, respond, and deal with potential threats to water resources or develop effective management policies. FY 2001 funds will allow the NPS to participate in a coordinated desert water resources assessment with USGS, FWS and BLM to better understand the complexities of ground water aquifer systems and their associated biological resource values. In addition, the funds will provide for the development of effective water resource protection strategies.

This request is a component of the National Park Service's Natural Resource Challenge.

▪ ***South Florida Ecosystem Restoration Task Force (+$500,000***): The budget proposes an increase of $500,000 in FY 2001 for the Office of the Executive Director, South Florida Ecosystem Restoration Task Force. The Office of the Executive Director (OED) provides all administrative, managerial, technical, and policy support to the operations of the South Florida Ecosystem Restoration Task Force, the Working Group, and its designated subgroups. The office is primarily responsible for coordinating the development of consistent policies, plans and procedures; coordinating and integrating the restoration activities including the implementation of the Central and South Florida Restudy project (C&SF Restudy, now known as the Comprehensive Everglades Restoration Plan); for facilitating cooperation and partnerships, and where necessary, resolving conflicts between the participating Federal, State, Tribal, regional, and local government agencies and entities; coordinating scientific and other research; and preparing an outcome oriented strategic plan with annual updates and an annual integrated financial plan of South Florida restoration projects and activities. In FY 2001, the task force will continue to take on significant additional responsibilities related to integration of all restoration work during the implementation of the Comprehensive Everglades Restoration Plan. While the task force was instrumental in the consensus building inherent to agreement on the plan, its workload will continue to increase as it establishes policies and processes which will ensure the integration of the various restoration activities with many of the complicated technical components of the restudy while minimizing potential conflicts among the member governments and agencies. This FY 2001 budget request will provide funds to hire the additional staff that are necessary to produce annual program management and financial tracking reports and prepare annual assessments of restoration performance. These management actions and the resultant work products and reports will be correlated to the annual outcome oriented performance goals that will be established in FY 2000 as part of the region-wide strategic plan. This proposed budget increase will also support an expansion of the task force's public outreach projects and activities which are required to ensure compliance with the 1996 Water Resources Development Act legislation. During FY 2001, the scope of workload demands and responsibilities of this office will be greatly increased, mainly related to the expected scope of the first components of restudy implementation. In addition, conducting, coordinating and providing logistical support for inter-agency meetings; conducting annual financial tracking and restoration performance assessments; and staffing up to handle the large volume of task force, working group and public and private inquiries resulting from the Comprehensive Everglades Restoration Plan implementation will place increased workload demands on the South Florida Ecosystem Restoration Task Force Office. Without the increase, the task force will not be able to adequately coordinate the implementation of the Comprehensive Everglades Restoration Plan projects or to hire the additional staff that are necessary to produce annual program management and financial tracking reports and prepare annual assessments of restoration performance.

Park Management/Resource Stewardship

Cultural Resources

▪ ***Museum Management Program – Protect Collections (+$500,000):*** The National Park Service is proposing an increase of $500,000 in FY 2001 to further protect and preserve over 80 million objects and archives in the Service's museum collections. These museum collections are important, not only in their own right, but also because of their direct association with the nationally significant sites in the National Park System. In order to ensure that all park museum collections are preserved and available for public benefit, both now and in the future, the National Park Service has established preservation and protection standards for parks to follow. This increase would accelerate park efforts to correct deficiencies and meet these established museum collections standards. Using the NPS Checklist for Museum Collections Preservation and Protection, parks identify preservation and protection standards that they meet or fail to meet. As of 1999, parks met 63.4 percent of the standards. With funding at the FY 2000 level for the Museum Collections Preservation and Protection Program ($2.76 million), 95 percent of the standards will be met by 2029. With this increase of $500,000 the National Park Service would meet 95 percent of the standards by 2024.

This increase would allow parks to further improve museum collections storage, fire protection, security, and environmental controls and assess the condition and preservation treatment needs of individual objects. The increase would address park preservation and protection needs while increasing public access to park museum collections. For example, funds would be devoted to increasing access to the collections by providing research and reference work areas for the public, and storage space and equipment that facilitate access. Bent's Old Fort National Historic Site would improve storage and facilitate public access to the collections for research. Priority would be given to correcting fire and security deficiencies at parks. For example, Cumberland Island National Seashore would install a fire suppression system for Plum Orchard Mansion to protect the historic furnishings and the historic structure.

The proposed increase directly supports the Secretary's priorities to "reduce risks to our collections while increasing their access and use in supporting bureau mission activities" and "correct the Department's material weakness in museum property management."

In summary, this increase would allow parks to exceed NPS long-term goal Ia6 (Museum Collections) by accelerating the correction of deficiencies so that 95 percent of the museum collections preservation and protection standards would be met by 2024.

▪ ***Museum Management Program – Collections Cataloging (+$500,000):*** The National Park Service is proposing an increase of $500,000 in FY 2001 to accelerate the cataloging of 80 million museum objects and archival items in the Service's museum collections. These collections date, in some instances, to establishment of the park and comprise 30.0 million archeological, 3.4 million historical, 1.2 million biological, 147,000 paleontological, 55,000 ethnological, and 49,000 geological items, plus an additional 45.4 million archival and manuscript items. These collections are important, not only in their own right, but also because of direct association with the nationally significant sites in the National Park System. Though many of these collections have been cataloged and documented, making them accessible to the American public, an estimated 43 million are still uncataloged. Parks have made progress in cataloging the backlog since receiving funding specifically for this purpose in FY 1987. As of FY 1999, 61 percent of the objects and specimens and 35 percent of the archives are cataloged. With the FY 2000 level of backlog cataloging funding ($2.85 million) parks reduce the backlog at a rate of 1.94 million items per year and will be completed by 2022. This increase of $500,000 would allow parks to eliminate the cataloging backlog by 2019.

The National Park Service museum collections are cataloged into the Automated National Catalog System (ANCS+). The public has access to collections data through the public search function of ANCS+. The Service lacks accountability for objects that are not cataloged and the public cannot benefit from these rich resources. Once objects and archives are listed in ANCS+, parks can then account for them; access information about them for

research, interpretation, and resource management; and make them available to the public for research, exhibit and educational purposes. Much of the work would be contracted or completed under partnership agreements with universities and other museums.

The proposed increase directly supports the Secretary's priorities to "reduce risks to our collections while increasing their access and use in supporting bureau mission activities" and "correct the Department's material weakness in museum property management." Further, it specifically supports the DOI strategic plan performance goals to "increase the number of collection items cataloged and accessible for use by at least five percent, increase opportunities for public access by two percent, and ensure that all units with museum property provide electronic access to the collections."

In summary, this increase would allow parks to exceed NPS long-term goal Ib2D (Museum Objects) by accelerating the rate of cataloging. The increase would result in the following change in performance: (1) accelerate cataloging of park museum collections so that the backlog will be eliminated in 2019 rather than 2022, and (2) increase public access to collections.

▪ ***Vanishing Treasures Initiative (+$310,000; +3FTE***): The NPS is proposing an increase of $310,000 and 3 FTE in FY 2001 for the vanishing treasures initiative. The goal of the program is to overcome a backlog of essential preservation work, bringing prehistoric and historic structures to a condition in which they can be preserved by routine maintenance activities, and ensure that a trained and skilled workforce is in place for maintaining these resources. The ancient and historic ruins in southwestern and western parks are deteriorating rapidly; some are in danger of total collapse. This is the fourth year of a program that is expected to last no more then ten to fifteen 15 years, depending upon funding levels. Through FY 2000, approximately $2.1 million has been added to the bases of 37 parks for recruitment and training of skilled craft specialists and experts in conservation, archeology and engineering. In addition, $1.9 million has been used to conduct preservation projects in 25 parks. This proposal would provide $181,000 for additional base funding at three parks to be used as follows:

- Aztec Ruins National Monument [+$58,000; +1FTE] - Funding would be used for archeological support to preserve vanishing treasures. Funding would enable the park to obtain compliance for treatment of structures, research appropriate treatments, document condition of structures, monitor structures, and document and report on stabilization work.

- Casa Grande Ruins National Monument [+$68,000; +1 FTE] - Funding would be used to address the present and ongoing needs of cultural resource preservation and specifically the park’s primary resources. The entire monument is on the National Register and listed as a national landmark. Prominent features and those specifically mentioned in the monument's enabling legislation are the pre-historic compounds of walled caliche structures from the Hohokam culture (1100 to 1450 AD). The park would perform routine and annual preservation maintenance on all caliche resources, including planning, budgeting, monitoring and hands on preservation techniques. This request would enable the park to address daily preservation needs and monitoring of the resources.

The monument is in the forth year of an extensive Inventory and Condition Assessment (ICAP) by the University of Pennsylvania School of Preservation and as a result, the monument has specific directions and tasks that are recommended and need professional expertise to implement. This position will be a key figure in our success and ability to address the present and on-going needs of the cultural resource and specifically the Casa Grande and compound A and B.

- El Morro National Monument [+$55,000; +1FTE] - Funding would be used to perform critical preservation work on buildings and archeological sites. The park would create a proactive preservation program in order to preserve, protect and maintain the integrity of two historic structures and numerous archeological sites. This request would

enable the park to perform preservation work, including stabilization of historic and ancient stone walls, foundations and piers, at these structures and sites.

Of the remaining request ($129,000), $4,000 is proposed to be used for project management and monitoring, bringing the total to $60,000; and $125,000 would be used to conduct preservation projects on significant prehistoric sites and structures. This increase will bring the amount available for projects to $0.960 million, which will allow for the implementation of approximately two additional projects in FY 2001.

▪ ***Treasures of the Nation Digitization (+$1,000,000; +1 FTE):*** The National Park Service is requesting an increase of $1.0 million and one FTE in FY 2001 for the *Treasures of the Nation Digitization* program. This increase would initiate a systematic program to digitize images of NPS archival and museum collections and make them accessible to the public through thematic exhibits and an indexed database on the World Wide Web. In the first year 14,000 objects and archival documents, representing the most significant items at sixteen parks, would be made available. The NPS would capture high quality photographs of the objects and documents to ensure long-term preservation of the images; digitize the images, provide captions, an index, and metadata for the images; and incorporate the images into thematic exhibits and an indexed database for the Web. In FY 2001, the program would also include an innovative educational presentation on the Internet pertaining to The NPS Civil War Soldiers and Sailors Partnership.

With this increase the National Park Service would:

- Preserve endangered original archival and museum materials by making digital images available to the public for access purposes in place of fragile originals.
- Make the most significant collections in selected parks available via the Internet for students, scholars, educators, publishers, and the public.
- Create web-based thematic exhibits featuring NPS museum collections, focusing on American creativity, diversity, leadership, struggles, and exploration. Enrich and further develop existing NPS online exhibits, park profiles, and preservation-related publications and bibliographies that are already serving over 8,000 users a week.
- Provide seamless access to Federal and non-federal museum collections by linking to park websites, the Civil War Soldiers and Sailors Database, and thematic collections-based World Wide Web exhibits of other organizations, such as the Smithsonian Institution, Library of Congress, National Archives, the Department of Education, and non-federal museums.
- Enrich and enhance the National Park Service Automated National Catalog System (ANCS+) by adding digitized images to catalog descriptions so that the database may better serve students and researchers, as well as provide enhanced accountability.

In FY 2001, $700,000 of this increase would be devoted to digitizing National Park Service museum collections. Thematic exhibits now on the NPS Website would be expanded and new themes added. Existing exhibits include the *American Visionaries* series, featuring George Washington Carver, Frederick Douglass, Thomas Moran, the Tuskegee Airmen, and Booker T. Washington; the *Civil War* series, including "Camp Life: Civil War Collections from Gettysburg National Military Park" and "Symbols in Battle: Civil War Flags in NPS Collections"; and *A New Lease on Life: Museum Conservation in the NPS*, a series showcasing notable recent conservation treatments. The existing *Treasures of the Nation* feature, listing highly significant objects from many parks, would add 14,000 entries and expand the documentation available for each item.

The NPS museum collections have over 80 million items, including 33.5 million archeological, ethnographic and historical objects; 1.4 million biological, geological, and paleontological specimens; and 45.4 million archival and manuscript items. The archival collections are estimated to include over 36 million manuscripts, 9 million photographs, 41,000 sound recordings, and 12,000 moving images (both videotapes and movies). These collections are in over 320 parks. Upon evaluation for values, usage, and risk factors, about 10 percent of the

collections (8 million items) are expected to be of the most immediate significance for education and general research.

NPS collections are grounded and enriched by being managed in their original context, that is, in the historic landscape (battlefield, canyon, garden, or cave), or in the historic structure (house, studio, shipyard, factory, or fort) where many of the most exciting events of American history and cultural experience have taken place. Examples of collections that could be made accessible through this initiative include:

- Thomas Edison's laboratory notebooks, personal papers, first sound recordings, belongings and equipment.
- Archeological collections documenting American history and prehistory and the actual structures and landscapes from which these objects came, such as Mesa Verde National Park and Chaco Culture National Historical Park.
- Military history materials including uniforms, weapons, ordnance, and soldiers' diaries and letters from many American military actions, including those at Colonial National Historical Park, Gettysburg National Military Park, Andersonville National Historic Site, USS *Arizona* Memorial, and Vietnam Veterans Memorial.
- The personal belongings, letters, works and diaries of many major American writers and poets, such as Eugene O'Neill, Henry Wadsworth Longfellow, and Carl Sandburg; presidents, such as Abraham Lincoln, Theodore Roosevelt, Herbert Hoover, Franklin D. Roosevelt, and John F. Kennedy; visionaries, such as Martin Luther King, Jr., and Frederick Douglass; reformers, such as Eleanor Roosevelt and Maggie Walker; and artists, such as Augustus Saint-Gaudens and Thomas Moran.

All digitized images would be archived in ANCS+ and be available to the public not only on the World Wide Web, but also through the public search function of ANCS+. The members of the public who want more object-specific information than would be available on the Internet would be able to access additional data through ANCS+. Even with increased use of the collections, preservation of such items as historic photographs and documents would be enhanced by making preservation photographs and digital images available to users in place of the original. By reserving the original item for essential and specialized access, the condition of the original resource is preserved. Other funding that supports the cataloging of NPS museum collections would give priority to cataloging collections selected for digitization.

Most of the photography and digitization would be contracted or completed under partnership agreements. For example, the NPS has a cooperative agreement with the Northeast Document Conservation Center, Andover, Massachusetts, to provide technical services for museum and archival collections and a partnership with Parks and History Association, Washington, D.C., to provide World Wide Web support. National Park Service staff would select the items to be digitized, manage the contracts, provide quality control, and design and produce the World Wide Web exhibits.

The National Park Service currently has over 1,500 images of NPS collections on the World Wide Web. The proposed increase would make over 10 times more images available on this medium. Such a dramatic increase in availability of collections would greatly expand the number of individuals who access this information. The increase directly supports the Secretary's priorities to reduce risks to our collections while increasing their access and use in supporting bureau mission activities, and correct the Department's material weakness in museum property management. Further, it specifically supports the Department's strategic plan performance goals to increase the number of collection items cataloged and accessible for use by at least five percent, increase opportunities for public access by two percent, and ensure that all units with museum property provide electronic access to the collections. This increase would allow parks to greatly exceed the NPS long-term (2005) goal that public use of museum collections is ten percent over the 1999 baseline. At the rate of 14,000 images per year, over 100 years would be required to digitize two percent of the NPS collections. However, the first year involves startup costs and efficiency in processing is expected to increase, perhaps double, in successive years.

Park Management/Resource Stewardship

In FY 2001, the NPS would apply $300,000 of the increase to expand efforts already underway as part of *The NPS Civil War Soldiers and Sailors Partnership*. The NPS plans to present to the American public, in the year 2001, an innovative educational presentation on the Internet, which would offer over 50 million Americans with ancestors who fought in the Civil War a direct family link, through the Civil War Soldiers and Sailors System (CWSS), to this stirring period in American history, and to the places in the National Park System where their ancestors fought. Using a list of 5.4 million soldier names, this multimedia presentation on the Internet would connect soldier names with regimental histories, battle histories, and to battlefields and specific monuments and historical markers in the parks where their regiments fought.

Starting with an index of names based on Union and Confederate records at the National Archives, the system would link names to regiments, regiments to battles, and feature copies of letters and diary entries from soldiers at those battles, link from regiments to photos of the hundreds of historic monuments at the parks, and to the historical markers in the parks describing each part of the battles.

A great deal has already been accomplished. In a private partnership with the Mormon Church, the Federation of Genealogical Societies, and the United Daughters of the Confederacy, volunteers in over 20 States have completed over 90 percent of the data entry for 5.4 million soldier names. Digitizing brief histories of 5,000 Union and Confederate regiments is over 80 percent completed. Library records on 7,000 letters and diary entries from Gettysburg and Fredericksburg have been cataloged in park personal computer software called ProCite. In 1996, the NPS put 235,000 names of African American Union soldiers on the World Wide Web, linked to regimental and battle histories, but without multimedia imagery. The Park Service is currently inventorying the names of approximately 150,000 cemetery records at thirteen national cemeteries in the National Park System. (Gettysburg, Shiloh, Antietam, Stones River, and Andersonville are completed). In addition to the cemetery records, a Union prisoner list from Andersonville and 4,000 Confederate prisoners at Fort McHenry have been entered.

The $300,000 in funding from the *Treasures of the Nation Digitization* program would allow the NPS to accomplish the following:

- Cataloging of 24,000 letters and diary entries in the NPS Civil War libraries (the letters are typically copies of originals brought in by park visitors, often descendents, and are separate from letters in the NPS museum collections). The indexing would provide links to soldier and regiment names that can then link to monuments, battles, and cemetery records already in the Civil War Soldiers and Sailors database. Large collections of these types of documents are found in the libraries of Gettysburg, Shiloh, Fredericksburg and Spotsylvania County Battlefields Memorial National Military Parks, as well as other Civil War parks.
- Imaging copies of these documents for presentation on the World Wide Web.
- Producing digital photographs of all monuments (approximately 6,000) and historical markers (approximately 2,000) at NPS Civil War sites and referencing them to Union and Confederate regiments.
- Building a multimedia Internet presentation linking soldier names, regimental and battle histories, and images of historical photos, documents, monuments, battlefield markers, and maps.
- Links would be built: to the National Archives, which manages the original military records in the database; to the Library of Congress's online catalog of Civil War maps; and to the 60,000 Civil War photographs at the U.S. Army Military History Institute.

The purpose of the *Treasures of the Nation Digitization* program is to allow millions of Americans to make a personal, family connection to the very places their ancestors lived, worked, fought and died, and to the visionaries and leaders that shaped their country and its heritage. This program builds on private partnerships and volunteers, and would bring thousands of new visitors to the NPS Website and the historic sites and landscapes throughout the country.

In summary, this increase would give the American public a powerful educational tool to explore America's collected heritage and result in the following change in FY 2001 performance: (1) increase the NPS collections

publicly available on the World Wide Web by over 10 times, (2) expand the number of items with images accessible in ANCS+ by 14,000, (3) create exhibits on themes that have shaped the Nation, such as creativity, leadership, exploration, and struggle to showcase NPS collections, (4) enhance World Wide Web links among Federal museum collections and between Federal and non-federal museum collections, (5) increase the number of public users of the museum collections area on the NPS Website, (6) exceed the long-term goal to increase public use of NPS collections by ten percent over the 1999 baseline, and (7) add to existing NPS Websites new images and documents, greatly expanding their accessibility and availability to an interested public.

Resources Protection

▪ ***Resource Protection Act Implementation (+$500,000; +6 FTE):*** The NPS is proposing an increase of $500,000 and 6 FTE in FY 2001 for Natural Resource Protection Act implementation. This program implements provisions of the 1996 Omnibus Parks Act which allows the NPS to restore resources damaged by third parties. Resource restoration will be undertaken using cost recovery rather than NPS appropriations, as provided for by the 1996 Omnibus Act. This funding will provide the needed expertise and administrative framework to plan and direct restoration and to support cost recovery. The program will be implemented in direct support of injured park resources, but will be administered by the Environmental Quality Division to ensure program consistency and efficient deployment of specialized expertise.

It is estimated that there are over 2,000 instances of damage to park resources per year that require response and restoration. Currently there is no implementation for this program; there is only limited capability for restoration activities for damages resulting from oil spills and the marine environment, available largely as a result of funding from the Oil Spill Pollution Act.

Program outputs will include: Evaluation of damaged resources, baseline characterizations, responsible party contacts; Coordination with State and Federal Trustee Agencies in seeking coordinated recoveries from responsible parties; and provision of contract and other support in recovery actions and evaluations. Program outcomes will include: Restoration of damaged resources; replacement, restoration or other activities associated with mitigation of damages to public property; and preparation of yearly report to Congress mandated by 16 USC 19jj, listing recoveries, amounts spent, and returns to the Treasury and program accountability.

The program will be implemented in direct support of injured park resources but will be administered by the Environmental Quality Division. This will facilitate program consistency (e.g. similar resources are valued similarly), close cooperation with other State and Federal trustees, efficient deployment of specialized resources, and resource accountability. The program will work in tandem with existing natural resource damage and restoration processes to assure uniform application of recovery processes and to network with existing sources of expertise in the public and private sectors. Damage response and restoration will be undertaken without impacting the current NPS budget. Once restoration is achieved, surplus funds are then forwarded to the General Treasury.